

Directions of Test

Test Name	2016 Bull CAT 02	Total Questions	100	Total Time	180 Mins
Section Name	No. of Questions	Time limit	Marks per Question	Negative Marking	
Verbal	34	1:0(h:m)	3	1/3	
DI & Reasoning	32	1:0(h:m)	3	1/3	
Quantitative Ability	34	1:0(h:m)	3	1/3	

Section : Verbal

DIRECTIONS for the question: Read the passage and answer the question based on it.

Question No. : 1

Often, the hardest step in speculative paleo-anthropology lies in overcoming assumptions. So let us back up and begin by asking a very basic question: *Why is it that a human female generally has to compete with other women to get a mate?*

Nature's story is nearly always about two sexes with markedly different agendas. For a male, each time he prevents one of his rivals from copulating with a female, that is one more womb which might be induced to carry forward his genetic heritage. The same is not normally true for a female, looking at males. Once engaged in gestation, her reproductive success is unaffected by copulations taking place nearby. When there is an abundance of food, one female gets little or no direct benefit by denying any other female a chance to reproduce, or to be inseminated by the same male.

A leading hypothesis holds that humans became paragons of adaptability by emphasizing general, species-wide behavioral and mental neoteny. Further, our offspring are born *altricial*, replacing reflex instinct with lessons drawn from experience and the accumulated wisdom of the tribe, channeled by only the most general of innate predispositions. This process takes a long time, during which our children are helpless as no others in the history of life on Earth.

The presumption goes that human mothers need long-term, dependable partnership to help them carry big-brained, dependent children across the hazardous, exhausting stretch from embryo to maturity. And while some human societies have used brother-sister alliances to fill this need, or communal role-sharing, the majority have left mothers primarily dependent on continued loyalty and aid from the fathers of their children.

Now by definition, monogamous species have approximately equal numbers of successful male and female breeders, so one might expect both to behave similarly, competing the same amount with others of the same sex. But this is *not* the case, because most "monogamous" males are not *purely* monogamous in every sense of the word. Generally, these males do not give their mates so much absolute *fidelity* as *devotion*... meaning they will do anything and everything to serve and protect the nest and their offspring. But, given an opportunity to engage in outside sex *without* risk or harm, they will often take advantage.

For example, the females of many bird species force prospective mates to engage in lengthy, exhausting courtship "dances" and other displays, before becoming sexually receptive. For years this was thought to involve *species identification* -- preventing hybrid insemination by a related species. But plumage, scent, and a thousand other simpler markers are available to accomplish the same end. Now it is thought that mating dances serve more directly pragmatic role, by culling out philanderers. Few already-mated males can afford the time and energy -- exhausting themselves in an effort at wooing -- if they already have a mate and nest elsewhere. To male birds, monogamy may not mean *absolute* fidelity, but it does mean having priorities.

Excerpted from "Neoteny and Two-Way Sexual Selection in Human Evolution" by David Brin

In the third paragraph, the italicized word *altricial* is closest in meaning to?

- A) Selfish
- B) Retention of childlike characteristics in mature members of a species
- C) Nearly unformed
- D) Juvenilization of appearance

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Based on additional information given below, answer the question that follows.

During each annual mating season, females congregate onshore. If food is plentiful and the beach roomy enough, there is small cause for struggle between females, so most behaviorists used to be drawn to the noisy, extravagant displays of competing males. Known as a "beach master," each bull elephant seal outweighs any female many times over. By threat, bluster, and frequent bloody fights, he drives off all male interlopers to secure a local monopoly over insemination. Females acquiesce to this situation. Indeed, should the bull be away at the far end of his territory, and a rogue male attempt mating on the sly, females will often squall for the beach master to come drive the invader out.

Why do female elephant seals prefer to share one male rather than get individual attention?

- A) Female elephant seals, unlike humans, have no sentimentality.
- B) Since females rear their kids alone, the choice of a mate is determined solely by factors which might reflect the quality of his genes.

- C) The survival of the fittest ensures that the non-alpha males are all killed off by the dominant bull.
D) The dominant bull punishes any deviant females who attempt mating with any other rogue male on the sly.

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In her book, **The Woman That Never Evolved**, Sarah Hrdy (1981) shows that harem systems differ dramatically. Some, such as the gray langur monkey, can be much more stressful than that of elephant seals. _____ Also, while a mother langur doesn't need provisioning by a mated male, she does require the security of her troop. For these reasons, the bull langur has no single rutting season. To maximize reproduction, he must "police" his harem year-round. And, since his prime period averages only a few years, it is in his Darwinian interest to see that all local females serve his reproductive needs. One bloody consequence is that a new bull, on taking over a langur troop, often kills unweaned infants so that their mothers will resume ovulating sooner.

Which of the following best fills the gap?

- A) By mating with as many males as possible mothers are able to successfully protect their young.
B) Biology, it is sometimes thought, has worked against women.
C) Langur mothers don't cycle through well-timed mating seasons, but re-enter estrus when their latest child either weans or dies.
D) Langur mothers are continually making trade-offs between quality and quantity and weighing the best possible actions for both her and her infant.

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Based on your understanding of the passage, which of the following could be the reason for most birds being monogamous?

- A) Like human children, bird chicks are fairly defenceless at birth and take a long time before they can take to flight.
- B) Some of the offspring raised by a monogamous pair come from the female mating with an extra-pair male partner.
- C) Serial monogamy resembles polygyny in its reproductive consequences because some males are able to utilize more than one female's reproductive lifespan through repeated pairings.
- D) Chicks must grow fast to achieve flight before the seasons change. This, plus a high metabolism, means few avian young survive on the labor of one parent alone.

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Question No. : 5

The adventure started when my wife and I applied for life insurance. The application procedure involved a blood test. We were turned down. The economical insurance company sent the news in two brief letters that were identical, except for a single additional word in the letter to my wife. My letter stated that the company was denying me insurance because of the "results of your blood test." My wife's letter stated that the company was turning her down because of the "results of your husband's blood test." When the added word *husband's* proved to be the extent of the clues the kindhearted insurance company was willing to provide about our uninsurability, I went to my doctor on a hunch and took an HIV test. It came back positive. I learned that I had a 1-in-1,000 chance of being healthy from the following statistic: the HIV test produced a positive result when the blood was not

infected with the AIDS virus in only 1 in 1,000 blood samples. That might sound like the same message he passed on, but it wasn't. My doctor had confused the chances that I would test positive *if* I was not HIV-positive with the chances that I would not be HIV-positive *if* I tested positive.

To understand my doctor's error, let's employ Bayes's method. The first step is to define the sample space. We could include everyone who has ever taken an HIV test, but we'll get a more accurate result if we employ a bit of additional relevant information about me and consider only heterosexual non-IV-drug-abusing white male Americans who have taken the test. Now let's classify the members of the space. Here the relevant classes are those who tested positive and are HIV-positive (true positives), those who tested positive but are not positive (false positives), those who tested negative and are HIV-negative (true negatives), and those who tested negative but are HIV-positive (false negatives).

Suppose we consider an initial population of 10,000. We can estimate that in 1989 about 1 in those 10,000 heterosexual non-IV-drug-abusing white male Americans who got tested were infected with HIV. Assuming that the false-negative rate is near 0, that means that about 1 person out of every 10,000 will test positive due to the presence of the infection. In addition, since the rate of false positives is 1 in 1,000, there will be about 10 others who are not infected with HIV but will test positive anyway. Let's prune the sample space to include only those who tested positive. We end up with 10 people who are false positives and 1 true positive. In other words, only 1 in 11 people who test positive are really infected with HIV. In my case the screening test was apparently fooled by certain markers that were present in my blood even though the virus this test was screening for was not present.

It is important to know the false positive rate when assessing any diagnostic test. For example, a test that identifies 99 percent of all malignant tumors sounds very impressive, but I can easily devise a test that identifies 100 percent of all tumors. All I have to do is report that everyone I examine has a tumor. The key statistic that differentiates my test from a useful one is that my test would produce a high rate of false positives. But the above incident illustrates that knowledge of the false positive rate is not sufficient to determine the usefulness of a test—you must also know how the false-positive rate compares with the true prevalence of the disease. If the disease is rare, even a low false-positive rate does not mean that a positive test implies you have the disease. If a disease is common, a positive result is much more likely to be meaningful.

Excerpted from 'The Drunkard's Walk - How Randomness Rules our Lives' by Leonard Mlodinow

Assume that in the male members of certain community the chance of HIV infection among those being tested in 1989 was about 1 percent. If the author happened to be part of that community, what would be the chances of his being infected in the case of a positive HIV test?

- A) 1 in 11 B) 5 in 11 C) 6 in 11 D) 10 in 11

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Excerpted from 'The Drunkard's Walk - How Randomness Rules our Lives' by Leonard Mlodinow

How did the author zero in on which blood test to do, in spite of not being given details by his insurance company?

- A) Insurance companies have a standard list of tests
- B) It was a disease which could be transmitted by him to his wife
- C) The author had influenza, and as a result his WBC count had gone up
- D) Family physicians rely on patient history in advising them about which tests to undergo

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Here is a table documenting the false positive and false negative of an allergy test:

	Test says "Yes"	Test says "No"
Have allergy	80%	20% "False Negative"
Don't have it	10% "False Positive"	90%

If 1% of the population has the allergy, and your test says "Yes", what are the chances that you really have an allergy?

- A) 7% B) 20% C) 80% D) 90%

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What is important in judging the accuracy of any diagnostic test?

- I. The false negative rate.
- II. The false-positive rate
- III. The rate of true prevalence of the disease.

A) I and III B) II and III C) I and II D) II only

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Question No. : 9

UNICEF reports that in 2011, 6.9 million children under five died from preventable, poverty-related diseases. Can we reduce that death toll? Each of us spends money on things that we do not really need. You could take the money you're spending on those unnecessary things and give it to the Against Malaria Foundation, which would take the money you had given and use it to buy nets to protect children and we know reliably that if we provide nets, they're used, and they reduce the number of children dying from malaria.

Fortunately there is a growing movement: effective altruism, which combines both the heart and the head. The most significant people in effective altruism are people who have had backgrounds in philosophy or economics or math. For example, Bill Gates. The website of the Bill & Melinda Gates Foundation says, "All lives have equal value." That's the rational understanding of our situation in the world that has led to these people being the most effective altruists in history. According to one estimate, the Gates Foundation has already saved 5.8 million lives.

But it's just not billionaires like Gates. Toby Ord is a research fellow in philosophy at the University of Oxford. He became an effective altruist when he calculated that with the money that he was likely to earn throughout his academic career, he could give enough to cure 80,000 people of blindness in developing countries and still have enough left for a perfectly adequate standard of living. He's pledged to live on 18,000 pounds a year and to give the rest to those organizations.

Will Crouch is a graduate student in philosophy, and he's set up a website called 80,000 Hours, the number of hours he estimates most people spend on their career, to advise people on how to have the best, most effective career. But you might be surprised to know that one of the careers that he encourages people to consider, if they have the right abilities and character, is to go into banking or finance. Why? Because if you earn a lot of money, you can give away a lot of money.

Not all charities are equally effective. Take, for example, providing a guide dog for a blind person. It costs about 40,000 dollars to train a guide dog and train the recipient so that the guide dog can be an effective help to a blind person. It costs somewhere between 20 and 50 dollars to cure a blind person in a developing country if they have trachoma.

Being an effective altruist helps to overcome what I call the Sisyphus problem. Sisyphus is condemned by the gods to push a huge boulder up to the top of the hill. Just as he gets there, the effort becomes too much, the boulder escapes, rolls all the way down the hill, he has to trudge back down to push it up again, and the same thing happens again and again for all eternity. Does that remind you of a consumer lifestyle, where you work hard to get money, you spend that money on consumer goods which you hope you'll enjoy using? But then the money's gone, you have to work hard to get more, spend more, and to maintain the same level of happiness, it's kind of a hedonic treadmill. You never get off, and you never really feel satisfied. Becoming an effective altruist gives you that meaning and fulfillment. It enables you to have a solid basis for self-esteem on which you can feel your life was really worth living.

Excerpted from TED Talk by Peter Singer

What yardstick does the author recommend to judge the effectiveness of altruism?

- A) All lives have equal value B) The death rate of children who die because of poverty or preventable disease
- C) The number of lives saved per dollar spent D) The dollar donation to causes which are dear to the heart of the donor

DIRECTIONS for the question: Read the passage and answer the question based on it.

Question No. : 10

UNICEF reports that in 2011, 6.9 million children under five died from preventable, poverty-related diseases. Can we reduce that death toll? Each of us spends money on things that we do not really need. You could take the money you're spending on those unnecessary things and give it to the Against Malaria Foundation, which would take the money you had given and use it to buy nets to protect children and we know reliably that if we provide nets, they're used, and they reduce the number of children dying from malaria.

Fortunately there is a growing movement: effective altruism, which combines both the heart and the head. The most significant people in effective altruism are people who have had backgrounds in philosophy or economics or math. For example, Bill Gates. The website of the Bill & Melinda Gates Foundation says, "All lives have equal value." That's the rational understanding of our situation in the world that has led to these people being the most effective altruists in history. According to one estimate, the Gates Foundation has already saved 5.8 million lives.

But it's just not billionaires like Gates. Toby Ord is a research fellow in philosophy at the University of Oxford. He became an effective altruist when he calculated that with the money that he was likely to earn throughout his academic career, he could give enough to cure 80,000 people of blindness in developing countries and still have enough left for a perfectly adequate standard of living. He's pledged to live on 18,000 pounds a year and to give the rest to those organizations.

Will Crouch is a graduate student in philosophy, and he's set up a website called 80,000 Hours, the number of hours he estimates most people spend on their career, to advise people on how to have the best, most effective career. But you might be surprised to know that one of the careers that he encourages people to consider, if they have the right abilities and character, is to go into banking or finance. Why? Because if you earn a lot of money, you can give away a lot of money.

Not all charities are equally effective. Take, for example, providing a guide dog for a blind person. It costs about 40,000 dollars to train a guide dog and train the recipient so that the guide dog can be an effective help to a blind person. It costs somewhere between 20 and 50 dollars to cure a blind person in a developing country if they have trachoma.

Being an effective altruist helps to overcome what I call the Sisyphus problem. Sisyphus is condemned by the gods to push a huge boulder up to the top of the hill. Just as he gets there, the effort becomes too much, the boulder escapes, rolls all the way down the hill, he has to trudge back down to push it up again, and the same thing happens again and again for all eternity. Does that remind you of a consumer lifestyle, where you work hard to get money, you spend that money on consumer goods which you hope you'll enjoy using? But then the money's gone, you have to work hard to get more, spend more, and to maintain the same level of happiness, it's kind of a hedonic treadmill. You never get off, and you never really feel satisfied. Becoming an effective altruist gives you that meaning and fulfillment. It enables you to have a solid basis for self-esteem on which you can feel your life was really worth living.

Excerpted from TED Talk by Peter Singer

How do you measure the meaningfulness of your life?

- A) By your own satisfaction and sense of fulfillment after becoming an altruist
- B) By having a moral compass that does not differentiate between children based on nationality or race
- C) By ensuring that at all times you use both heart and head
- D) By seeing how many other lives you have been able to impact in your lifetime

DIRECTIONS for the question: Read the passage and answer the question based on it.

Question No. : 11

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Excerpted from TED Talk by Peter Singer

As used in the passage, the word closest to being an antonym for altruistic would be?

- A) Rational B) Hedonic C) Self-esteem D) Trudge

DIRECTIONS for the question: Read the passage and answer the question based on it.

Question No. : 12

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Excerpted from TED Talk by Peter Singer

What could be a possible criticism of the Will Crouch's *giving* philosophy mentioned by passage?

- A) It will cause laziness – as people will want to delegate work
- B) It will encourage people to choose professions based on salaries, not interest
- C) It will reinforce the ideals of materialism and status, associated with wealth
- D) It will create a surfeit of bankers, and other professions will suffer

DIRECTIONS for the question : Read the passage and answer the question based on it.

Question No. : 13

We live in an entertainment economy in which the constant exposure to forms of entertainment leads us to expect that we will be entertained even when entertainment is not the main focus of the activity. When so much of the consumer's landscape is made up of standardized fare, entertainment provides an additional level of enjoyment. Theming helps to enchant sites of consumption in an increasingly McDonaldized world.

As the balance of many people's consumption has shifted from goods to services, they begin to seek more from those services. However, it is well known that consumers' enjoyment and dislike of a service is only partly conditioned by the objective quality of the service itself. The *servicescape* is crucial to the consumer's response. The servicescape is made up of a host of features in addition to the service itself. The servicescape will involve cues to the consumer concerning the enjoyment of the service. The most notable of these components of the servicescape is the physical environment within which the service is delivered and the manner in which it is delivered.

Clearly, services that entertain are more likely to be enjoyed than those which not, particularly among consumers who are well primed with the appropriate cultural capital to produce positive impressions. Developments like theme parks are responsible for this inflation in expectations of the provision of services, resulting in services in the form of shopping and eating that take place in themed and thereby entertaining environments. Increasingly, then, we live in an *experience economy*.

Providing an entertaining environment that excites the senses may be a mechanism for distinguishing a service from that of its competitors even though the actual services may otherwise be more or less identical. This proposition is an extension of the principle that we have all known for a long time, namely, that people do not consume on the basis of use value alone. As any student of Coca-Cola advertisements will have noticed, the company rarely seeks to sell its well-known beverage on the basis of flavour; instead, it positions itself as a purveyor of identities and lifestyles. The same kind of formula operates in connection with many areas of service provision: the nature of the themed environment connects with the consumer's identity and lifestyle.

However, theming presents several problems for service providers. First, it is costly. Theming requires substantial investments without any certainty that the theme and the way it is presented will be sufficiently absorbing to warrant the expenditures involved. The costs are likely to revolve around the expenses associated with supplying the physical embodiment of the theme in terms of visual, auditory and even tactile stimuli and the costs of training staff to behave in ways consonant with the theme. On top of this, no matter how well the theme is physically implemented, it may simply be unappealing to consumers.

Second, expectations of themed environments probably operate like a ratchet screwdriver, in that people's expectations are constantly increasing. For new entrants to themed service provision, this means that costs are constantly likely to increase as the theming stakes grow. For existing providers, they have to face the fact that what is innovative and exciting today may be hackneyed and dull tomorrow as new entrants enter the field with more compelling ideas and ever more engaging ways of implementing them. The world of theming is littered with high-profile casualties, alongside some spectacular successes.

Excerpted from Pg 16-17, 'The Disneyization of Society' by Alan Bryman

In citing the Coca Cola example, the author mentions that people do not consume based on value alone. What example comes to mind when the predominant expectation is value alone?

- A) Cooking oil B) Staple pins C) Workshop tools D) McDonald's

DIRECTIONS for the question : Read the passage and answer the question based on it.

Question No. : 14

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The world of theming is littered with high-profile casualties, alongside some spectacular successes. What practice, if adopted by successful themers, would negate the disadvantage of 'the ratchet screwdriver' effect, mentioned in the last paragraph?

- A) Ensure a flexibility in the system, so that the system falls back to its original state after the pressure is removed
B) To continually repackage the hackneyed and dull into something that is innovative and exciting
C) The nature of the themed environment should connect with the consumer's identity and lifestyle
D) Build in a 'refresh' into the system; after every few years ensure that exciting new stuff is added

DIRECTIONS for the question : Read the passage and answer the question based on it.

Question No. : 15

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Excerpted from Pg 16-17, 'The Disneyization of Society' by Alan Bryman

Amusement parks are an example of what comes to mind first when we look at theming in services. How can we apply the concept of themes when it comes to a service like tourism?

- A) Promote a theme like Incredible India!
- B) Religious tours for Senior Citizens
- C) Speed and thrill-filled rides
- D) Films can help promote tourism

DIRECTIONS for the question : Read the passage and answer the question based on it.

Question No. : 16

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Excerpted from Pg 16-17, 'The Disneyization of Society' by Alan Bryman

All of the below can be considered critical elements of a servicescape, except

- A) The interactions between the service deliverer and the customer
- B) The ambience in which the service is consumed
- C) Entertainment and memorability
- D) The way the service is delivered

DIRECTIONS for the question : Read the passage and answer the question based on it.

Question No. : 17

We're pretty much all the same in terms of our human DNA. You're 99.99 percent identical in terms of your human DNA to the person sitting next to you. But that's not true of your gut microbes: you might only share 10 percent similarity with the person sitting next to you in terms of your gut microbes.

Microbes in our body help us digest our food. They help educate our immune system. They help us resist disease, and they may even be affecting our behavior. So how do they do all this stuff? Well, in part it's because although there's just three pounds of those microbes in our gut, they really outnumber us. Well, each of us consists of about 10 trillion human cells, but we harbor as many as 100 trillion microbial cells.

And it turns out that in addition to traces of our human DNA, we also leave traces of our microbial DNA on everything we touch. We showed in a study a few years ago that you can actually match the palm of someone's hand up to the computer mouse that they use routinely with up to 95 percent accuracy. So this came out in a scientific journal a few years ago, but more importantly, it was featured on "CSI: Miami," so you really know it's true. Today, we can tell whether you're lean or obese with 90 percent accuracy by looking at the microbes in your gut. Even if we sequence your complete genomes and had all your human DNA, we could only predict your obesity with about 60 percent accuracy.

When we take the microbes from an obese mouse and transplant them into a genetically normal mouse that's been raised in a bubble with no microbes of its own, it becomes fatter than if it got them from a regular mouse. Sometimes what's going on is that the microbes are helping them digest food more efficiently from the same diet, so they're taking more energy from their food, but other times, the microbes are actually affecting their behavior.

People with C. diff, a terrible form of diarrhea, have to go to the toilet up to 20 times a day, We transplanted some of the stool from a healthy donor into these patients. Immediately, you have this radical change in the gut community. So one day after you do that transplant, all those symptoms clear up, the diarrhea vanishes, and they're essentially healthy again, coming to resemble the donor's community, and they stay there.

Excerpted from TED talk by Rob Knight

Which of the following would be an example of a microbial therapy used in the animal kingdom?

- A) A newborn pup cannot hear, see or excrete for the first 3 weeks. A mother dog licks a pup's hind ends to help stimulate the pup to empty its bladders and bowels.
- B) The use of fungi in the manufacture of antibiotics.
- C) Antibiotics like efrotomycin and lasalocid which are used in animals for growth promotion.
- D) A mother whale making its newborn calf eat its poop.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 18

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Excerpted from TED talk by Rob Knight

What advantage does microbial therapy have over conventional therapy?

- A) It provides for a much larger range of functions in the immune system.
- B) In time, it can be customized for a specific community or person.
- C) Microbes decide how efficiently food is digested.
- D) Microbial therapy, by introduction of gut microbes from healthy adults, is an effective treatment for diarrhea.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 19

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Excerpted from TED talk by Rob Knight

What is the implied critique of gene therapy that this article presents?

- A) It is restrictive because the microbial genes outnumber human genes.
- B) A gene is delivered to the body using a virus. Viruses, however, can cause an unwanted immune system reaction.
- C) 99.99% of our genes are the same. 90% of our microbial cultures are different.
- D) Gene therapy calls for long living cells so that the therapy goals can be achieved. Due to the rapid division of many cells, patients have to be treated with repeated courses of gene therapy.

DIRECTIONS for the question : *Read the passage and answer the question based on it.*

Question No. : 20

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And it turns out that in addition to traces of our human DNA, we also leave traces of our microbial DNA on everything we touch. We showed in a study a few years ago that you can actually match the palm of someone's hand up to the computer mouse that they use routinely with up to 95 percent accuracy. So this came out in a scientific journal a few years ago, but more importantly, it was featured on "CSI: Miami," so you really know it's true. Today, we can tell whether you're lean or obese with 90 percent accuracy by looking at the microbes in your gut. Even if we sequence your complete genomes and had all your human DNA, we could only predict your obesity with about 60 percent accuracy.

When we take the microbes from an obese mouse and transplant them into a genetically normal mouse that's been raised in a bubble with no microbes of its own, it becomes fatter than if it got them from a regular mouse. Sometimes what's going on is that the microbes are helping them digest food more efficiently from the same diet, so they're taking more energy from their food, but

other times, the microbes are actually affecting their behavior.

People with C. diff, a terrible form of diarrhea, have to go to the toilet up to 20 times a day. We transplanted some of the stool from a healthy donor into these patients. Immediately, you have this radical change in the gut community. So one day after you do that transplant, all those symptoms clear up, the diarrhea vanishes, and they're essentially healthy again, coming to resemble the donor's community, and they stay there.

Excerpted from TED talk by Rob Knight

So this came out in a scientific journal a few years ago, but more importantly, it was featured on "CSI: Miami," so you really know it's true. What does the author imply by this line?

- A) Author is being funny and mocks a science based crime series.
- B) CSI: Miami follows Crime Scene Investigators as they use physical evidence to solve grisly murders.
- C) People believe science portrayed by TV serials more than the same mentioned in academic journals.
- D) CSI: Miami is a magazine dealing in popular science, more for the layman than the academician.

DIRECTIONS for the question : Read the passage and answer the question based on it.

Question No. : 21

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There was, of course, the influence of folk music, but in the early days of film there were not many links between an urban-based cinema and the largely rural folk music. In the days of the silent movies, when musicians played in halls, they started learning to adjust. The duration and tempo of the ghazal on the harmonium had to suit the film the musician was accompanying. This in itself was a highly rebellious act since a classically trained Indian musician would have learnt from his *ustad* (guru) that nothing could deviate from the mehfil which had been created—a performance meant for the elite few.

But this began to change as the twentieth century dawned. The invention of the gramophone revolutionised both rural life and Indian music. For the first time, Indian classical music had an existence outside the darbars. Classical records began to be produced and ragas and songs had to be restricted to fit onto one side of the disc. And, for the first time in Indian musical history, a musician performed without an audience being present. This was what the Bollywood film was trying to do. The requirement was for a short song that would appeal as much to northern as southern India; where people might know little of the Hindi language the film was made in—their mother tongue being Bengali, Punjabi, Tamil, or Telugu—but could tap their toes to the music.

As opposed to the Western conductor and his orchestra following the written music in front of them, in an Indian classical music performance an individual might sing, compose and be his own orchestra. Unless, and until, he takes great pleasure in his own art, he is not going to keep the audience entranced. This makes Indian music very individualistic, while the Western one is more collective, following a score and based on team-work, led by the conductor.

The Indian tradition had created teachers – gurus and ustad – not composers. Ustads created *bandishes* or compositions that taught a student the principles of a raga which, in turn, would continue to be cultivated and refined as the *bandishes* were handed down to the next generation. During a performance, disciples will respond to the ustad and he will go on teaching them in public. This means that, as opposed to the organised collective face a Western classical music performance represents, Indian music is intuitive, individualistic, and also very anarchic. This is also seen when there are duets in Indian classical music which can result in one musician throwing a challenge to the other.

Finally with classical Indian music not having a concept of notation, it was film songs with many hundreds being sung every year that forced Indians to note music down, since it was impossible to remember every tune. A musical piece also had to be planned and composed—it could not depend on inspiration or impromptu improvisation.

Excerpted from Pages 226-232 – Bollywood – A History by Mihir Bose

Why does the author consider Indian classical music anarchic?

- A) The lyrics used in the khayals are generally quite unintelligible to the average listener.
- B) In Western music everything is planned and there is no deviation from the plan during the performance. Indian classical in contrast has jugalbandis which are quite impromptu.
- C) In Indian classical music, the disciples have to strictly follow the Guru or Ustad's composition; they cannot improvise.
- D) Classical Indian music does not have the concept of notation, hence each time a raga is played differently – which can be conceived to be chaotic by a westerner.

DIRECTIONS for the question : Read the passage and answer the question based on it.

Question No. : 22

Indian classical musicians looked down upon the music of the theatre, which formed the basis of early Indian films. And, at that stage, India's classical music was raga music, presented through khayal songs sung in a dialect that was understood by only a few. It could be argued that this is true of Western opera but there, words can be separated from the music. In India, this was just not on. There was a strong religious background to classical Indian music. There were *gharanas* of singers for whom the unfolding of the raga had hardly any independent existence outside of the khayal *bandish*. This also meant that independent instrumental music was ruled out.

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Excerpted from Pages 226-232 – Bollywood – A History by Mihir Bose

Hindi film music differed in one aspect from Indian classical, in the sense that it aped the practice of notation followed by the West. What is the reason for the implementation of this practice?

- A) Indian classical music relied on the memory of the singer – and it was honed by practice. In contrast to the limited number of ragas, the number of film songs was quite high.
- B) As a new generation of non-classically-trained musicians came to the fore, they found it impossible to remember a tune and express it to the musicians without notations.
- C) The duration and tempo of the accompany instruments of the orchestra during the silent talkies days had to suit the film.

D) When musicians had to play for the gramophone recording instead of the audience, it required much better time management, which could only be done with notations.

DIRECTIONS for the question : Read the passage and answer the question based on it.

Question No. : 23

Indian classical musicians looked down upon the music of the theatre, which formed the basis of early Indian films. And, at that stage, India's classical music was raga music, presented through khayal songs sung in a dialect that was understood by only a few. It could be argued that this is true of Western opera but there, words can be separated from the music. In India, this was just not on. There was a strong religious background to classical Indian music. There were *gharanas* of singers for whom the unfolding of the raga had hardly any independent existence outside of the khayal *bandish*. This also meant that independent instrumental music was ruled out.

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Excerpted from Pages 226-232 – Bollywood – A History by Mihir Bose

What can be said to be the defining characteristic of the early Hindi film song?

- A) The length of the song.
- B) The broad appeal of the melody.
- C) The flexibility.
- D) The influence from Indian classical music.

DIRECTIONS for the question : Read the passage and answer the question based on it.

Question No. : 24

Indian classical musicians looked down upon the music of the theatre, which formed the basis of early Indian films. And, at that stage, India's classical music was raga music, presented through khayal songs sung in a dialect that was understood by only a few. It could be argued that this is true of Western opera but there, words can be separated from the music. In India, this was just not on. There was a strong religious background to classical Indian music. There were *gharanas* of singers for whom the unfolding of the raga had hardly any independent existence outside of the khayal *bandish*. This also meant that independent instrumental music was ruled out.

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Excerpted from Pages 226-232 – Bollywood – A History by Mihir Bose

What can be inferred about the reason for the use of a live orchestra during the performances of the initial silent movies?

- A) During the era of silent movies there were no gramophones.
- B) During the era of the silent movie, going to the movies was viewed as a big celebration – and that called for the presence of a band.
- C) Music was recognized as essential, contributing to the atmosphere and giving the audience vital emotional cues.
- D) It was difficult to synchronize a gramophone or recorder sound with the motion pictures.

DIRECTIONS for question: The five sentences (labelled 1,2,3,4 and 5) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentence and key in this sequence of five numbers as your answer.

Question No. : 25

1. Even the financial sector has seen innovation.
2. Just three years ago, there were only 15 million bank accounts in a country of 1.2 billion people.
3. More than 50 million new bank accounts have been established, bringing India's rural poor into the modern financial system.
4. Indians concluded that if people won't come to the banks, the banks should go to the people.
5. The result has been the creation of brigades of traveling tellers with hand-held devices, who have converted the living rooms of village homes into makeshift branches, taking deposits as low as a dollar.

- A) 12453 B) C) D)

DIRECTIONS for question: The five sentences (labelled 1,2,3,4 and 5) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentence and key in this sequence of five numbers as your answer.

Question No. : 26

1. The financial markets have sensed it and are preparing for disaster.
2. Peripheral countries must abandon austerity as part of a Europe-wide programme to raise productivity, financial institutions must be taken into public ownership, and debt written off.
3. Hidebound by neoliberal economics, they will continue with austerity, privatisation and liberalisation.
4. After three years of festering, truly drastic action is now required.
5. But it is unthinkable that Europe's current political leaders would embark on such changes.

A) 42531 B) C) D)

DIRECTIONS for the question: Identify the most appropriate summary for the paragraph and write the key for most appropriate option.

Question No. : 27

Can I have my brain back now? I enjoyed the Olympics, and my impression is that most Britons did so too. Holidaying at home, I noticed people in pubs and shops delighting in unusual celebrities and unusual challenges, especially from the Paralympians. With Bradley Wiggins' success in the Tour de France and Andy Murray's in New York, it made for a satisfying summer of sport. Yet I saw nothing to justify the hysteria, the sobbing with joy and weeping with ecstasy, of the London media and politicians. The grasping for national pride and pseudo-psychological significance exaggerated the event and cheapened the athletes' achievement.

1. Despite the British summer being one of unprecedented athletic success, the ensuing celebrations, pronouncements and hysteria have been a damn squib
2. Despite the summer bringing in a lot of success for British athletes, the reaction to the complete set of events has not been up to the mark
3. Even though the summer has been one of terrific success for British athletes, the over the top celebrations and hullabaloo have been over the top and devalue actual achievement
4. Even though the summer has been one of unprecedented achievement for British athletes, the hullabaloo associated with it is completely unjustified

A) 3 B) C) D)

DIRECTIONS for question: The six sentences (labelled 1,2,3,4,5 and 6) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentence and key in this sequence of six numbers as your answer.

Question No. : 28

1. It is ubiquitous, yet hidden.
2. As a result, women from the northeast continue to be seen as 'loose' and African students like Yannick are given a subhuman status because of the colour of their skin.
3. You can sense it but you can't really pin it down.
4. So much for the land of Gandhi.
5. The biggest hurdle in tackling racism is its invisible character.
6. Worse still, in India it is institutionalised with law enforcers themselves complicit in perpetuating stereotypes.

A) 513624 B) C) D)

DIRECTIONS for question: The six sentences (labelled 1,2,3,4,5 and 6) given in this question, when properly sequenced, form a coherent paragraph. Decide on the proper order for the sentence and key in this sequence of six numbers as your answer.

Question No. : 29

1. However, this reasoning is ultimately problematic and leads me to ask: Is the best argument made on racial grounds or economic grounds?
2. The argument made by ICP is of course one based upon racial grounds because race is a federally protected class; the economic

class known as the poor is not.

3. It seems the reasoning is to blame the government for subsidizing affordable housing in poor, black communities instead of richer, whiter high-resource communities, a policy which supposedly perpetuates the cycle of poor black people in poor black communities.

4. Is there even a distinguishable difference between the two anymore?

5. Leave out the racial signifiers and just like that we're talking about integrating the rich and the poor.

6. However, their argument can be seen as an argument against economic segregation or its more popular term, "free market capitalism."

A) 314265 B) C) D)

DIRECTIONS for the question: Identify the most appropriate summary for the paragraph and write the key for most appropriate option.

Question No. : 30

Last semester I tried to create a college classroom that was a technological desert. I wanted the space to be a respite from the demands and distractions of smartphones, tablets, and computers. So I banned the use of technology because asking students to be professional digital citizens had not worked.

Simply requesting that students put away their phones was an exercise in futility. Adding a line in the syllabus that there would be grade penalties for unprofessional use of technology brought about no change in their habits of swiping and clicking. They meant no disrespect. Technology pulled at them and pulls at us creating a sense of urgency that few can ignore. I get it. This is not a college-student problem (I've been to faculty meetings). It's a human problem.

1. Education, the last bastion of learning not be infiltrated by the pernicious effects of technology, has fallen prey to technology and its devices, much like other areas in human life

2. The infiltration of technology in classrooms, by virtue of smart-phones and devices, is a problem not limited to education itself and mirrors wider behavioral changes in society

3. The human problem of being addicted to technology (by virtue of devices) is something that is creating a huge problem in classrooms

4. Technology, aided and spread with the help of innumerable smart devices, has infiltrated classrooms, like all other areas of life and disrupted education

A) 2 B) C) D)

DIRECTIONS for the question: Identify the most appropriate summary for the paragraph and write the key for most appropriate option.

Question No. : 31

For most of human history, works of visual art were the direct expression of the society that made them. The artist was not an autonomous creator; he worked at the behest of his patron, making objects that expressed in visible form that patron's beliefs and aspirations. As society changed, its chief patrons changed from medieval bishop to absolutist despot to captain of industry and art changed along with it. Such is patronage, the mechanism by which the hopes, values, and fears of a society make themselves visible in art. When World War I broke out in 1914, that mechanism was delivered a blow from which it never quite recovered. If human experience is the raw material of art, here was material aplenty but of the sort that few patrons would choose to look upon.

1. The system of patronage, which underpinned artistic expression, was ripped apart by World War I, ultimately leading art down a path from which it never quite recovered

2. Art, a factor of the kind of patronage it received, was dealt a body blow by World War I in 1914 which left art without its moving force

3. Art, driven by the different forms of patronage across different eras, suffered a blow in 1914 when World War I and never quite recovered from it

4. The system of expression of art, driven by patrons, was derailed by World War I, which opened a whole new of human experience for art to explore

A) 4 B) C) D)

DIRECTIONS for question: Four sentences related to a topic are given below. Three of them can be put together to form a

meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

Question No. : 32

1. A new study suggests that if engaged in online debate, college students can use the popular social network to learn and develop a variety of skills.
2. In the future, Ms. Greenhow said, she would be interested in studying the levels of engagement in similar Facebook applications, and how to encourage other participants to join in discussion more regularly.
3. In a paper released on Monday, Christine Greenhow, an assistant professor of education at Michigan State University, argues that using informal social-media settings to carry on debates about science can help students refine their argumentative skills, increase their scientific literacy, and supplement learning in the classroom.
4. Who says Facebook is always a distraction?

A) 2 B) C) D)

DIRECTIONS for question: Four sentences related to a topic are given below. Three of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

Question No. : 33

1. Western culture has long been suspicious of the imagination, for centuries defining it as inferior to reason and potentially dangerous to established order.
2. Beginning in the late 18th century, the imagination was gradually reclaimed by Western thinkers, artists, and the public.
3. Harari may simplify a complex, ambiguous, and highly variable theme, but he has captured an essential truth.
4. As the author of a history of imaginary worlds and the increasing acceptance of the imaginary in modern life, I was especially struck by Harari's emphasis on the centrality of fictions and the imagination to human history.

A) 3 B) C) D)

DIRECTIONS for question: Four sentences related to a topic are given below. Three of them can be put together to form a meaningful and coherent short paragraph. Identify the odd one out. Choose its number as your answer and key it in.

Question No. : 34

1. If successful, such a policy will do every remaining employee a favor by strengthening the organization and enabling it to prosper.
2. Letting overstaffing cause the organization as a whole to fail, imperiling every employee's future, surely does no one any favors.
3. Instead of representing dismissal as an attack on individual workers' livelihoods, strategists evidently thought, we need to represent it positively, in terms of adjusting the workforce to a size that will permit the organization to flourish.
4. I don't actually like the term rightsizing any more than you do and there is definitely a hint of dishonesty about the way the size adjustment never seems to be upward.

A) 4 B) C) D)

Section : DI & Reasoning

DIRECTIONS for the question: Go through the graph and the information given below and answer the question that follows.

Question No. : 35

A partial and faulty list of the International Comparison of Top Ten Debtor countries is given below

Column 1	Column 2	Column 3	Column 4	Column 5
				Concessional debt to total

Country	Total External Debt (US \$ Billion)	Debt to GNP	Debt Service	Short term debt to external debt	debt	
					Jumbled Figures	Correct Ranks
A	175.3	-	63.8	8.3	22.6	7
B	193.6	15	20.9	37.3	3.5	4
C	62.7	-	11.8	13.8	37.8	9
D	140	23	38.5	6.6	27.4	8
E	166.2	104	37.9	4.2	7.1	9
F	134.4	80	26	17	0.9	2
G	145.7	-	25.1	15.8	16.8	6
H	235.4	22	18.1	17.6	0.8	1
I	95.2	49	7.3	20.5	0.8	5
J	113.57	-	22.1	9.9	1.4	3

Additional information:

Ranks are assigned according to given figures from highest to lowest and not on the basis of terminology usage. It has been found that there are certain misprints in some columns.

- In column 1, figures 62.7, 175.3, 235.4 and 113.57 have been printed in wrong places. It is known that the country with the highest rank according to the figures in column 1 has the 7th rank in column 5. The country with the 8th rank in column 1 has the 2nd last rank in column 2.
- In column 3 also, 38.5, 20.9, 7.3 and 25.1 have been printed in wrong places. It is known that the country with the last rank in column 3 has the second rank in column 1. Countries with the figures 38.5 and 20.9 have consecutive ranks 5 and 6 respectively in column 1.
- In column 2 there are two countries with debt to GNP at 50, while two other countries have it at 77. The rank assigned to those countries having the same figures is same.
- It is known that countries with debt to GNP at 77, one of these countries has rank 5 in column 1 and the other rank 10 in column 1.
- It is known that among countries with debt to GNP at 50, the difference in figures between the debt services in column 3 for these two countries is 52. Moreover the country with the higher figure has rank 8 in column 4.
- In column 4, figures 17.6, 4.2 and 13.8 have been printed in wrong places. It is known that the country with figure 4.2 has the 8th rank in column 1. The country with figure 13.8 has the immediately next rank to the country which has a figure difference of 2 with it.
- The country with figure 17.6 has the 9th rank in column 5 and 3rd rank in column 1.
- In column 5 correct ranks have been given but all the figures have been jumbled.

It is further known that:

India has the first rank in column 5.

Philippines has the 10th rank in column 1.

Turkey has immediately one rank above Mexico in column 1.

Poland has the 5th rank in column 5.

China ranks first in column 4.

Russian Federation shares the same rank with Brazil in column 2 but a lower rank in column 1.

Indonesia is 2nd in rank in column 2 and is next to Argentina.

Which country among the following has the highest debt to GNP?

- A) Brazil B) India C) Argentina D) Poland

DIRECTIONS for the question: Go through the graph and the information given below and answer the question that follows.

Question No. : 36

A partial and faulty list of the International Comparison of Top Ten Debtor countries is given below

Country	Column 1	Column 2	Column 3	Column 4	Column 5	
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Ranks are assigned according to given figures from highest to lowest and not on the basis of terminology usage. It has been found that there are certain misprints in some columns.

- In column 1, figures 62.7, 175.3, 235.4 and 113.57 have been printed in wrong places. It is known that the country with the highest rank according to the figures in column 1 has the 7th rank in column 5. The country with the 8th rank in column 1 has the 2nd last rank in column 2.
- In column 3 also, 38.5, 20.9, 7.3 and 25.1 have been printed in wrong places. It is known that the country with the last rank in column 3 has the second rank in column 1. Countries with the figures 38.5 and 20.9 have consecutive ranks 5 and 6 respectively in column 1.
- In column 2 there are two countries with debt to GNP at 50, while two other countries have it at 77. The rank assigned to those countries having the same figures is same.
- It is known that countries with debt to GNP at 77, one of these countries has rank 5 in column 1 and the other rank 10 in column 1.
- It is known that among countries with debt to GNP at 50, the difference in figures between the debt services in column 3 for these two countries is 52. Moreover the country with the higher figure has rank 8 in column 4.
- In column 4, figures 17.6, 4.2 and 13.8 have been printed in wrong places. It is known that the country with figure 4.2 has the 8th rank in column 1. The country with figure 13.8 has the immediately next rank to the country which has a figure difference of 2 with it.
- The country with figure 17.6 has the 9th rank in column 5 and 3rd rank in column 1.
- In column 5 correct ranks have been given but all the figures have been jumbled.

It is further known that:

- India has the first rank in column 5.
- Philippines has the 10th rank in column 1.
- Turkey has immediately one rank above Mexico in column 1.
- Poland has the 5th rank in column 5.
- China ranks first in column 4.

Which country among the following has the same ranks in columns 1 and 2?

- A) China B) Philippines C) Turkey D) None of these

DIRECTIONS for the question: Go through the graph and the information given below and answer the question that follows.

Question No. : 37

A partial and faulty list of the International Comparison of Top Ten Debtor countries is given below

Country	Column 1	Column 2	Column 3	Column 4	Column 5	
	Total External Debt (US \$ Billion)	Debt to GNP	Debt Service	Short term debt to external debt	Concessional debt to total debt	
					Jumbled Figures	Correct Ranks
A	175.3	-	63.8	8.3	22.6	7
B	193.6	15	20.9	37.3	3.5	4
C	62.7	-	11.8	13.8	37.8	9
D	140	23	38.5	6.6	27.4	8
E	166.2	104	37.9	4.2	7.1	9
F	134.4	80	26	17	0.9	2
G	145.7	-	25.1	15.8	16.8	6
H	235.4	22	18.1	17.6	0.8	1
I	95.2	49	7.3	20.5	0.8	5
J	113.57	-	22.1	9.9	1.4	3

Additional information:

Ranks are assigned according to given figures from highest to lowest and not on the basis of terminology usage. It has been found that there are certain misprints in some columns.

- In column 1, figures 62.7, 175.3, 235.4 and 113.57 have been printed in wrong places. It is known that the country with the highest rank according to the figures in column 1 has the 7th rank in column 5. The country with the 8th rank in column 1 has the 2nd last rank in column 2.
- In column 3 also, 38.5, 20.9, 7.3 and 25.1 have been printed in wrong places. It is known that the country with the last rank in column 3 has the second rank in column 1. Countries with the figures 38.5 and 20.9 have consecutive ranks 5 and 6 respectively in column 1.
- In column 2 there are two countries with debt to GNP at 50, while two other countries have it at 77. The rank assigned to those countries having the same figures is same.
- It is known that countries with debt to GNP at 77, one of these countries has rank 5 in column 1 and the other rank 10 in column 1.
- It is known that among countries with debt to GNP at 50, the difference in figures between the debt services in column 3 for these two countries is 52. Moreover the country with the higher figure has rank 8 in column 4.
- In column 4, figures 17.6, 4.2 and 13.8 have been printed in wrong places. It is known that the country with figure 4.2 has the 8th rank in column 1. The country with figure 13.8 has the immediately next rank to the country which has a figure difference of 2 with it.
- The country with figure 17.6 has the 9th rank in column 5 and 3rd rank in column 1.
- In column 5 correct ranks have been given but all the figures have been jumbled.

It is further known that:

- India has the first rank in column 5.
- Philippines has the 10th rank in column 1.
- Turkey has immediately one rank above Mexico in column 1.
- Poland has the 5th rank in column 5.
- China ranks first in column 4.

The difference between the debt service of Brazil and China is:

- A) 4.5 B) 12.5 C) 19.8 D) 56.5

DIRECTIONS for the question: Go through the graph and the information given below and answer the question that follows.

Question No. : 38

A partial and faulty list of the International Comparison of Top Ten Debtor countries is given below

Country	Column 1	Column 2	Column 3	Column 4	Column 5	
	Total External Debt (US \$ Billion)	Debt to GNP	Debt Service	Short term debt to external debt	Concessional debt to total debt	
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A	175.3	-	63.8	8.3	22.6	7
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D	140	23	38.5	6.6	27.4	8
E	166.2	104	37.9	4.2	7.1	9
F	134.4	80	26	17	0.9	2
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Additional information:

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- In column 1, figures 62.7, 175.3, 235.4 and 113.57 have been printed in wrong places. It is known that the country with the highest rank according to the figures in column 1 has the 7th rank in column 5. The country with the 8th rank in column 1 has the 2nd last rank in column 2.
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- The country with figure 17.6 has the 9th rank in column 5 and 3rd rank in column 1.
- In column 5 correct ranks have been given but all the figures have been jumbled.

It is further known that:

- India has the first rank in column 5.
- Philippines has the 10th rank in column 1.
- Turkey has immediately one rank above Mexico in column 1.
- Poland has the 5th rank in column 5.
- China ranks first in column 4.

Which country among the following has the first rank in one column and the last rank in any other columns?

- A) Brazil B) Mexico C) India D) Philippines

DIRECTIONS for the question: Read the information given below and answer the question that follows

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 39

India played a total of five matches with Pakistan, of which two matches were played in India and three in Pakistan. India scored a different number of goals in each match among 1, 4, 5, 6 and 8 and conceded a different number of goals among 0, 1, 2, 4 and 6 in the five matches, not necessarily in that order. It is also known that

I. Pakistan scored 4 goals in one of the matches in Pakistan.

II. Compared to one of the other matches, the number of goals scored by India in the 4th match is half of that scored in the other match and the number of goals conceded by India in the 4th match is also half of that conceded in other match.

III. The number of goals India conceded in one of the matches is thrice that it conceded in the match in which it scored 4 goals.

IV. India won the match in which it scored only one goal and it was played in Pakistan but it was not the 4th match.

V. The 3rd match is played in India, and the 4th match is played in Pakistan.

VI. Compared to the 1st match, in the 2nd match the number of goals scored by India is 2 less but the number of goals conceded is 2 more.

Which of the following combinations is true of the goals scored by Pakistan?

- A) 2nd match – 4 B) 3rd match – 1 C) 4th match – 4 D) 1st match – 0

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 40

India played a total of five matches with Pakistan, of which two matches were played in India and three in Pakistan. India scored a different number of goals in each match among 1, 4, 5, 6 and 8 and conceded a different number of goals among 0, 1, 2, 4 and 6 in the five matches, not necessarily in that order. It is also known that

I. Pakistan scored 4 goals in one of the matches in Pakistan.

II. Compared to one of the other matches, the number of goals scored by India in the 4th match is half of that scored in the other match and the number of goals conceded by India in the 4th match is also half of that conceded in other match.

III. The number of goals India conceded in one of the matches is thrice that it conceded in the match in which it scored 4 goals.

IV. India won the match in which it scored only one goal and it was played in Pakistan but it was not the 4th match.

V. The 3rd match is played in India, and the 4th match is played in Pakistan.

VI. Compared to the 1st match, in the 2nd match the number of goals scored by India is 2 less but the number of goals conceded is 2 more.

How many goals did India score in the first match?

- A) 8 B) C) D)

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 41

India played a total of five matches with Pakistan, of which two matches were played in India and three in Pakistan. India scored a different number of goals in each match among 1, 4, 5, 6 and 8 and conceded a different number of goals among 0, 1, 2, 4 and 6 in the five matches, not necessarily in that order. It is also known that

I. Pakistan scored 4 goals in one of the matches in Pakistan.

II. Compared to one of the other matches, the number of goals scored by India in the 4th match is half of that scored in the other match and the number of goals conceded by India in the 4th match is also half of that conceded in other match.

III. The number of goals India conceded in one of the matches is thrice that it conceded in the match in which it scored 4 goals.

IV. India won the match in which it scored only one goal and it was played in Pakistan but it was not the 4th match.

V. The 3rd match is played in India, and the 4th match is played in Pakistan.

VI. Compared to the 1st match, in the 2nd match the number of goals scored by India is 2 less but the number of goals conceded is 2 more.

The matches that are played in India are the

- A) 1st & 2nd B) 2nd & 3rd C) 3rd & 4th D) None of these

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 42

India played a total of five matches with Pakistan, of which two matches were played in India and three in Pakistan. India scored a different number of goals in each match among 1, 4, 5, 6 and 8 and conceded a different number of goals among 0, 1, 2, 4 and 6 in the five matches, not necessarily in that order. It is also known that

I. Pakistan scored 4 goals in one of the matches in Pakistan.

II. Compared to one of the other matches, the number of goals scored by India in the 4th match is half of that scored in the other match and the number of goals conceded by India in the 4th match is also half of that conceded in other match.

III. The number of goals India conceded in one of the matches is thrice that it conceded in the match in which it scored 4 goals.

IV. India won the match in which it scored only one goal and it was played in Pakistan but it was not the 4th match.

V. The 3rd match is played in India, and the 4th match is played in Pakistan.

VI. Compared to the 1st match, in the 2nd match the number of goals scored by India is 2 less but the number of goals conceded is 2 more.

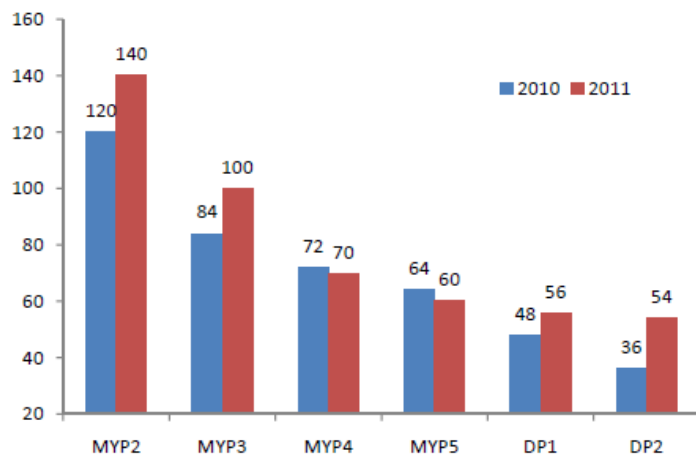
In which match Pakistan scored six goals?

- A) 2nd match B) 1st match C) 4th match D) 6th match

DIRECTIONS for the question: Go through the graph and the information given below and answer the question that follows.

Question No. : 43

The Maple Tree International School offers classes for grades MYP2 through DP2. New students are admitted only in MYP2 and no student leaves the school before completing DP2. Students failing in a particular year remain in the same grade the following year. The following bar graph shows the number of students enrolled in different grades at Maple Tree International School in 2010 and 2011.



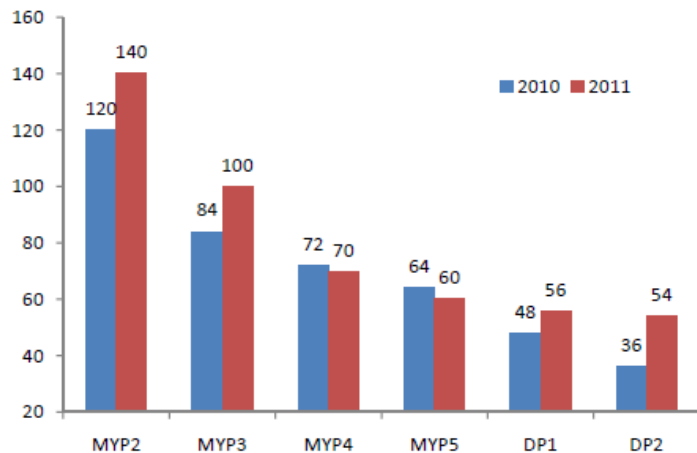
If no student of DP1 failed in 2010, what percent of the student of DP2 passed in 2010?

- A) 22.22% B) 16.66% C) 83.33% D) 77.77%

DIRECTIONS for the question: Go through the graph and the information given below and answer the question that follows.

Question No. : 44

The Maple Tree International School offers classes for grades MYP2 through DP2. New students are admitted only in MYP2 and no student leaves the school before completing DP2. Students failing in a particular year remain in the same grade the following year. The following bar graph shows the number of students enrolled in different grades at Maple Tree International School in 2010 and 2011.



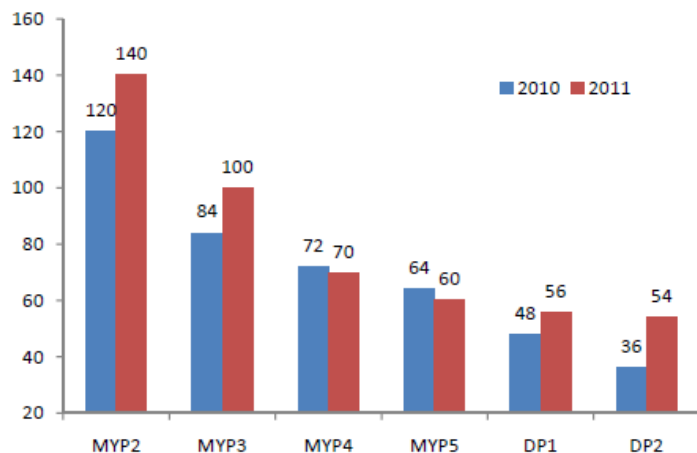
If no student of DP1 failed in 2010, how many students of MYP4 failed in 2010?

- A) 20 B) C) D)

DIRECTIONS for the question: Go through the graph and the information given below and answer the question that follows.

Question No. : 45

The Maple Tree International School offers classes for grades MYP2 through DP2. New students are admitted only in MYP2 and no student leaves the school before completing DP2. Students failing in a particular year remain in the same grade the following year. The following bar graph shows the number of students enrolled in different grades at Maple Tree International School in 2010 and 2011.



If no student of DP1 failed in 2010, what is the total number of students who failed in 2010? (in numerical value)

- A) 122 B) C) D)

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 46

There are 18 items, of which 15 items are to be selected to make a set of 3 packages containing an equal number of items. The 18 items are made up of 6 novels, 6 games and 6 jigsaw puzzles. The packages are made subject to the following conditions.

- All packages must contain at least one novel.
- All the jigsaw puzzles must be used in the three packages.
- A package containing games cannot contain more games than jigsaw puzzles.

If the number of games used in a particular package is equal to the number of novels in that package, which of the following must be the contents of one of the packets?

- A) 2G, 1J, 2N B) 1G, 1J, 3N C) 2G, 2J, 1N D) None of these
-

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 47

There are 18 items, of which 15 items are to be selected to make a set of 3 packages containing an equal number of items. The 18 items are made up of 6 novels, 6 games and 6 jigsaw puzzles. The packages are made subject to the following conditions.

- All packages must contain at least one novel.
- All the jigsaw puzzles must be used in the three packages.
- A package containing games cannot contain more games than jigsaw puzzles.

If two packages contain two novels each, what could be the contents of the third package?

- A) 1G, 2J, 2N B) 0G, 4J, 1N C) 0G, 3J, 2N D) 1G, 3J, 1N
-

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 48

There are 18 items, of which 15 items are to be selected to make a set of 3 packages containing an equal number of items. The 18 items are made up of 6 novels, 6 games and 6 jigsaw puzzles. The packages are made subject to the following conditions.

- All packages must contain at least one novel.
- All the jigsaw puzzles must be used in the three packages.
- A package containing games cannot contain more games than jigsaw puzzles.

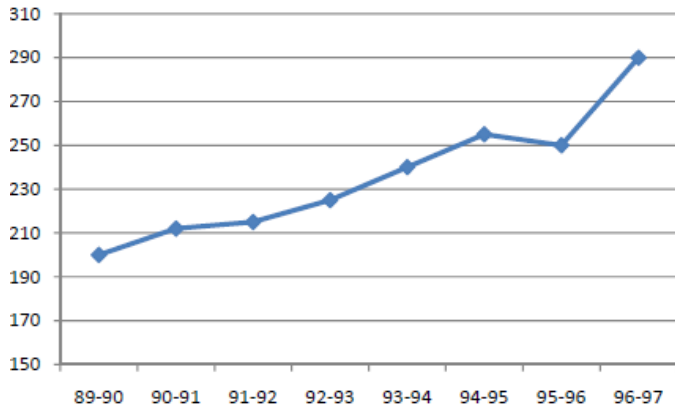
If all novels are used in the three packages, which of the following cannot be the difference between the number of jigsaw puzzles and the number of games used in any of the three packets?

- A) 2 B) 0 C) 4 D) 3
-

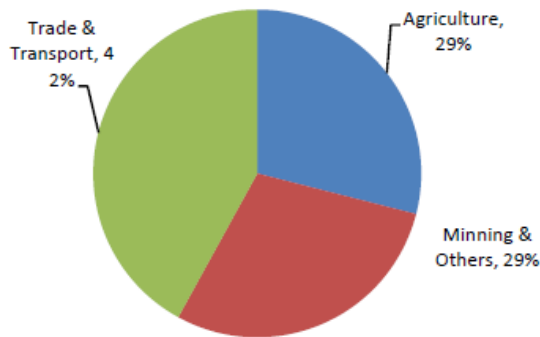
DIRECTIONS for the question: Analyse the graph/s given below and answer the question that follows.

Question No. : 49

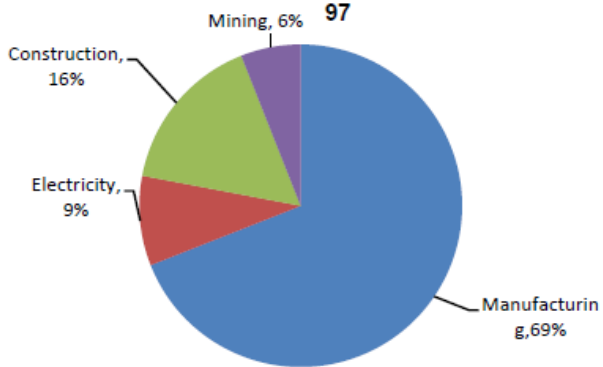
GDP at Factor Cost (Rs. '000 Crore)



Proportion to Total GDP in 1996-97



PROPORTION IN MINING/AND OTHERS IN 1996-97



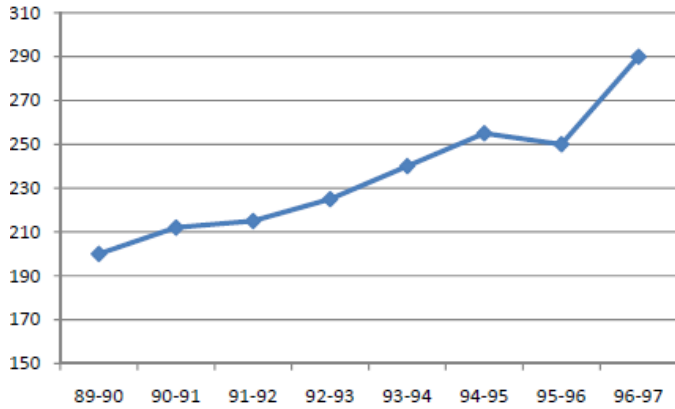
If the growth of GDP between the years 1995 – 96 and 1996 – 97 is maintained in 1997 – 98, what would be the contribution in value terms of Trade and Transport along with Agriculture in the year 1997 – 98, assuming the proportions of contributions of these sectors remain the same as in 1996 – 97?

- A) Rs. 2,75,000 crore B) Rs. 2,39,000 crore C) Rs. 3,00,000 crore D) Rs. 2,50,000 crore

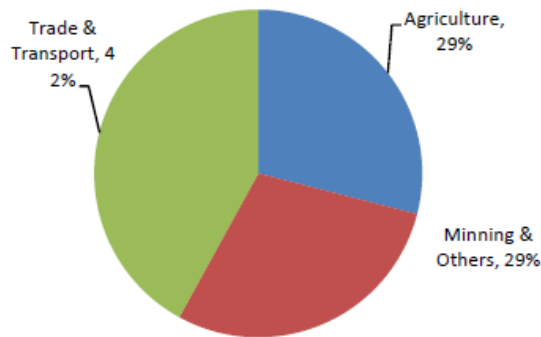
DIRECTIONS for the question: Analyse the graph/s given below and answer the question that follows.

Question No. : 50

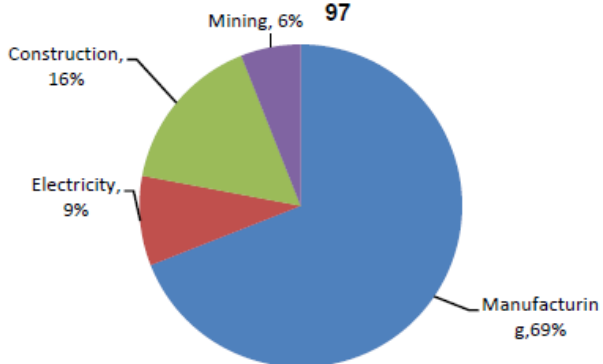
GDP at Factor Cost (Rs. '000 Crore)



Proportion to Total GDP in 1996-97



PROPORTION IN MINING/AND OTHERS IN 1996-97



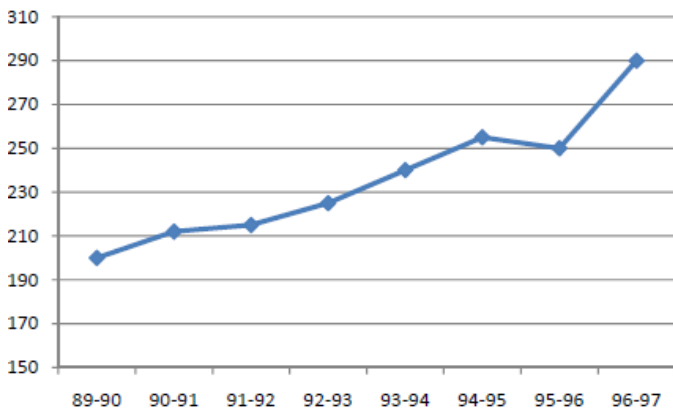
In 1995 – 96, Mining and others subtended an angle of 144° at the centre of the pie for Proportion to Total GDP. If the pie for Proportion in Mining and Others in 1995 – 96 is the same as that in 1996 – 97, what is the value of the contribution of Constructions to the total GDP in 1995 – 96?

- A) Rs. 25,000 crore B) Rs. 30,000 crore C) Rs. 15,000 crore D) Rs. 16,000 crore

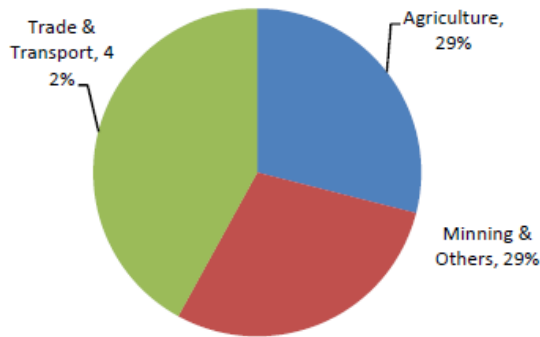
DIRECTIONS for the question: Analyse the graph/s given below and answer the question that follows.

Question No. : 51

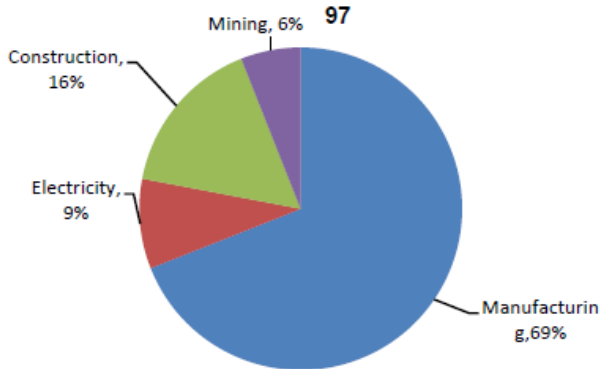
GDP at Factor Cost (Rs. '000 Crore)



Proportion to Total GDP in 1996-97



PROPORTION IN MINING/AND OTHERS IN 1996-97



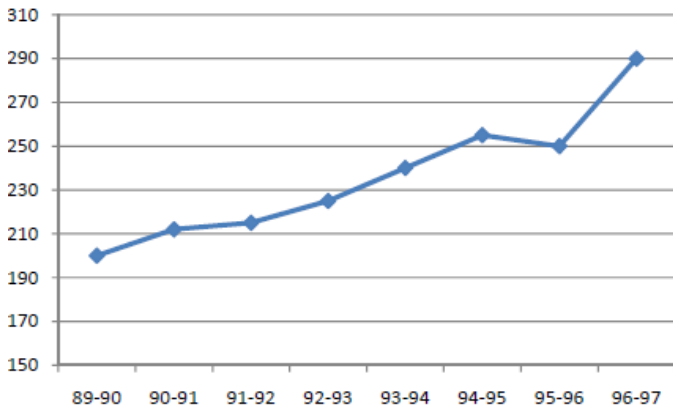
Assuming that the proportions of contributions to the GDP from Trade and Transport was 30 % in the year 1989 – 90, what would be the approximate increase in the Trade and Transport in the year 1996 – 97?

- A) 12 % B) 200 % C) 100 % D) 65 %

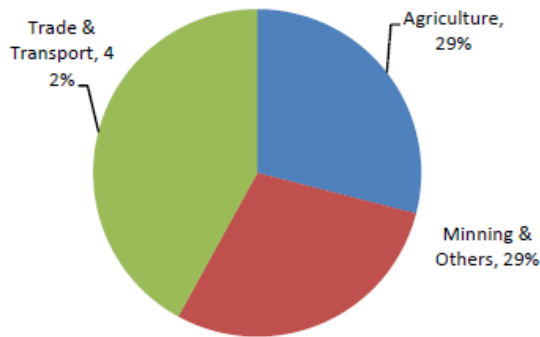
DIRECTIONS for the question: Analyse the graph/s given below and answer the question that follows.

Question No. : 52

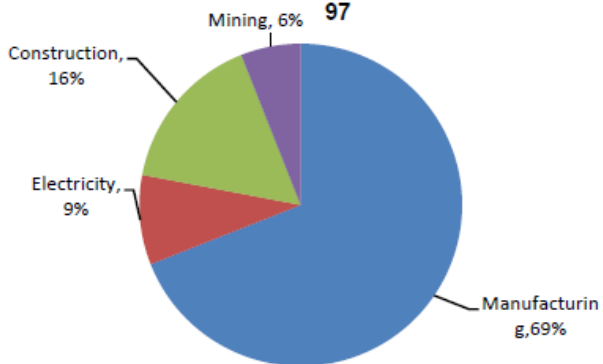
GDP at Factor Cost (Rs. '000 Crore)



Proportion to Total GDP in 1996-97



PROPORTION IN MINING/AND OTHERS IN 1996-97



If GDP increases by 15 % in the year 1997 – 98, and the proportion of Agriculture is changed to 40 %, what would be the contribution of Agriculture in GDP for the year 1997 – 98?

- A) Rs. 1,42,500 crore B) Rs. 1,50,400 crore C) Rs. 1,33,400 crore D) Rs. 1,24,500 crore

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 53

Four players " P, Q, R and S " played a game of bursting balloons by shooting at them. In this game the following terms are defined.

Aim = One attempt of shooting at a balloon.

Shot = One instance of shooting down a balloon.

Miss = One wasted aim.

The rules of the game are as follows:

- (i) Each person will be given a maximum of four rounds of aims, the first round comprising three aims. A person gets the second round of aims only if he scores at least one shot in the first (i.e. the previous) round and so on.
- (ii) If in any round, the number of shots by a player is 50% or more but less than 100% of the number of aims he had in that round, then he gets one extra aim in each of the remaining rounds. If the number of shots by the player is 100% of the number of aims he had in that round, he gets two extra aims in each of the remaining rounds.
- (iii) For each shot, a player is awarded five points and for each miss, he earns two negative points.

If R scored 11 points in the second round and was given not more than 21 aims in all the four rounds together, then what is the maximum possible points he could have scored in the third round?

- A) 23 B) C) D)

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 54

Four players – P, Q, R and S – played a game of bursting balloons by shooting at them. In this game the following terms are defined.

Aim = One attempt of shooting at a balloon.

Shot = One instance of shooting down a balloon.

Miss = One wasted aim.

The rules of the game are as follows:

- (i) Each person will be given a maximum of four rounds of aims, the first round comprising three aims. A person gets the second round of aims only if he scores at least one shot in the first (i.e. the previous) round and so on.
- (ii) If in any round, the number of shots by a player is 50% or more but less than 100% of the number of aims he had in that

round, then he gets one extra aim in each of the remaining rounds. If the number of shots by the player is 100% of the number of aims he had in that round, he gets two extra aims in each of the remaining rounds.

(iii) For each shot, a player is awarded five points and for each miss, he earns two negative points.

If P's score in the third round is 4 points, then his score in the second round cannot be

A) 11 B) 13 C) -3 D) 6

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 55

Four players " P, Q, R and S " played a game of bursting balloons by shooting at them. In this game the following terms are defined.

Aim = One attempt of shooting at a balloon.

Shot = One instance of shooting down a balloon.

Miss = One wasted aim.

The rules of the game are as follows:

(i) Each person will be given a maximum of four rounds of aims, the first round comprising three aims. A person gets the second round of aims only if he scores at least one shot in the first (i.e. the previous) round and so on.

(ii) If in any round, the number of shots by a player is 50% or more but less than 100% of the number of aims he had in that round, then he gets one extra aim in each of the remaining rounds. If the number of shots by the player is 100% of the number of aims he had in that round, he gets two extra aims in each of the remaining rounds.

(iii) For each shot, a player is awarded five points and for each miss, he earns two negative points.

If the number of shots in P's first round = that in Q's third round = that in S's second round = that in R's fourth round, and P scored eight points in the second round, then what is the maximum possible score by Q in the fourth round?

A) 35 B) C) D)

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 56

Four players – P, Q, R and S – played a game of bursting balloons by shooting at them. In this game the following terms are defined.

Aim = One attempt of shooting at a balloon.

Shot = One instance of shooting down a balloon.

Miss = One wasted aim.

The rules of the game are as follows:

(i) Each person will be given a maximum of four rounds of aims, the first round comprising three aims. A person gets the second round of aims only if he scores at least one shot in the first (i.e. the previous) round and so on.

(ii) If in any round, the number of shots by a player is 50% or more but less than 100% of the number of aims he had in that round, then he gets one extra aim in each of the remaining rounds. If the number of shots by the player is 100% of the number of aims he had in that round, he gets two extra aims in each of the remaining rounds.

(iii) For each shot, a player is awarded five points and for each miss, he earns two negative points.

If S had a total of 20 aims in all, then what is the maximum possible total number of points that he could have scored?

A) 46 B) 55 C) 65 D) 86

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 57

Four players – P, Q, R and S – played a game of bursting balloons by shooting at them. In this game the following terms are defined.

Aim = One attempt of shooting at a balloon.

Shot = One instance of shooting down a balloon.

Miss = One wasted aim.

The rules of the game are as follows:

- (i) Each person will be given a maximum of four rounds of aims, the first round comprising three aims. A person gets the second round of aims only if he scores at least one shot in the first (i.e. the previous) round and so on.
- (ii) If in any round, the number of shots by a player is 50% or more but less than 100% of the number of aims he had in that round, then he gets one extra aim in each of the remaining rounds. If the number of shots by the player is 100% of the number of aims he had in that round, he gets two extra aims in each of the remaining rounds.
- (iii) For each shot, a player is awarded five points and for each miss, he earns two negative points.

If in none of the 2nd, 3rd, or 4th rounds did any two players have an equal number of aims, then find the maximum possible total number of points that any player can score in all four rounds together.

- A) 91 B) 96 C) 120 D) 126

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 58

The city crime branch received reports of a burglary, a murder and a dacoity on the night of November 1, between 11 pm and 12 Midnight. The Superintendent of Police (SP) swung into action immediately and arrested six suspects – Ranga, Billa, Shamsher, Mallu, Kittu and Danny and interrogated them. The police knew that each crime was committed by exactly two of them. The six suspects provided the following answers:

- A. Ranga: "I was with Shamsher and Danny. I know nothing about the dacoity."
- B. Shamsher: "I was with Danny and Mallu. I know nothing about the burglary."
- C. Mallu: "I was with Ranga and Billa. I know nothing about the dacoity."
- D. Kittu: "I was with Ranga and Mallu. I know nothing about the murder."
- E. Billa: "I was with Kittu and Danny. I know nothing about the burglary."
- F. Danny: "I was with Kittu and Ranga. I know nothing about the murder."

From experience, the SP knows that the first sentence each of the suspects spoke was false, while the second sentence each of the suspects spoke was true.

Who were the murderers?

- A) Ranga and Billa B) Shamsher and Kittu C) Danny and Mallu D) Danny and Shamsher

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 59

The city crime branch received reports of a burglary, a murder and a dacoity on the night of November 1, between 11 pm and 12 Midnight. The Superintendent of Police (SP) swung into action immediately and arrested six suspects – Ranga, Billa, Shamsher, Mallu, Kittu and Danny and interrogated them. The police knew that each crime was committed by exactly two of them. The six suspects provided the following answers:

- A. Ranga: "I was with Shamsher and Danny. I know nothing about the dacoity."
- B. Shamsher: "I was with Danny and Mallu. I know nothing about the burglary."
- C. Mallu: "I was with Ranga and Billa. I know nothing about the dacoity."
- D. Kittu: "I was with Ranga and Mallu. I know nothing about the murder."
- E. Billa: "I was with Kittu and Danny. I know nothing about the burglary."
- F. Danny: "I was with Kittu and Ranga. I know nothing about the murder."

From experience, the SP knows that the first sentence each of the suspects spoke was false, while the second sentence each of the suspects spoke was true.

Who committed the burglary?

- A) Shamsheer and Kittu B) Danny and Mallu C) Ranga and Billa D) Danny and Shamsheer

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 60

After the finals of the National Basketball Competition, nine players from seven different states – Andhra Pradesh, Gujrat, Madhya Pradesh, Uttar Pradesh, Maharashtra, West Bengal and Bihar – are interviewed by reporters. Additional information about the interview is as follows:

- Each player has a unique jersey number.
- David D'Souza with jersey number 31 plays for Andhra Pradesh and is also known as a 3-point shooter.
- Rajeew Sinha with jersey number 23 is the eldest player and Subhash Divyundu is the heaviest player in the National Basketball Competition.
- Sachdeva Sharma has jersey number 30, while Jayesh Patel has jersey number 40.
- Rahul Jha is one of the dunkers and he is from West Bengal.
- The player from Uttar Pradesh and one player from Andhra Pradesh have single digit jersey numbers.
- Both the players with jersey numbers 40 and 34 play for Gujrat.
- Rahul Jha was interviewed after Ramesh Nayudu, but he wasn't the last person to be interviewed.
- Both the players from Andhra Pradesh and both the players from Gujrat are interviewed one after the other.
- The players from Uttar Pradesh, Maharashtra and West Bengal are interviewed one after the other in that order.
- The player with jersey 23 plays for Bihar.
- The heaviest player wears jersey number 34.
- Ramesh Nayudu is a passer for Andhra Pradesh.
- The only single digit jersey numbers are 2 and 3.
- The player from Maharashtra is interviewed 7th.

If David D'Souza is the first to be interviewed, who could not be interviewed 2nd?

- A) Ramesh Nayudu B) Rahul Jha C) The eldest player D) Both options 2 and 3

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 61

After the finals of the National Basketball Competition, nine players from seven different states – Andhra Pradesh, Gujrat, Madhya Pradesh, Uttar Pradesh, Maharashtra, West Bengal and Bihar – are interviewed by reporters. Additional information about the interview is as follows:

- Each player has a unique jersey number.
- David D'Souza with jersey number 31 plays for Andhra Pradesh and is also known as a 3-point shooter.
- Rajeew Sinha with jersey number 23 is the eldest player and Subhash Divyundu is the heaviest player in the National Basketball Competition.
- Sachdeva Sharma has jersey number 30, while Jayesh Patel has jersey number 40.
- Rahul Jha is one of the dunkers and he is from West Bengal.
- The player from Uttar Pradesh and one player from Andhra Pradesh have single digit jersey numbers.
- Both the players with jersey numbers 40 and 34 play for Gujrat.
- Rahul Jha was interviewed after Ramesh Nayudu, but he wasn't the last person to be interviewed.
- Both the players from Andhra Pradesh and both the players from Gujrat are interviewed one after the other.
- The players from Uttar Pradesh, Maharashtra and West Bengal are interviewed one after the other in that order.
- The player with jersey 23 plays for Bihar.
- The heaviest player wears jersey number 34.
- Ramesh Nayudu is a passer for Andhra Pradesh.
- The only single digit jersey numbers are 2 and 3.
- The player from Maharashtra is interviewed 7th.

If Anil Thakur, Akshay Kumar and Sachdev Sharma were players who got interviewed in order, then who will definitely not be wearing jersey number 2?

- A) Uttar Pradesh B) Ramesh Nayudu C) The Dunker D) Anil Thakur

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 62

After the finals of the National Basketball Competition, nine players from seven different states – Andhra Pradesh, Gujrat, Madhya Pradesh, Uttar Pradesh, Maharashtra, West Bengal and Bihar – are interviewed by reporters. Additional information about the interview is as follows:

- Each player has a unique jersey number.
- David D'Souza with jersey number 31 plays for Andhra Pradesh and is also known as a 3-point shooter.
- Rajeew Sinha with jersey number 23 is the eldest player and Subhash Divyundu is the heaviest player in the National Basketball Competition.
- Sachdeva Sharma has jersey number 30, while Jayesh Patel has jersey number 40.
- Rahul Jha is one of the dunkers and he is from West Bengal.
- The player from Uttar Pradesh and one player from Andhra Pradesh have single digit jersey numbers.
- Both the players with jersey numbers 40 and 34 play for Gujrat.
- Rahul Jha was interviewed after Ramesh Nayudu, but he wasn't the last person to be interviewed.
- Both the players from Andhra Pradesh and both the players from Gujrat are interviewed one after the other.
- The players from Uttar Pradesh, Maharashtra and West Bengal are interviewed one after the other in that order.
- The player with jersey 23 plays for Bihar.
- The heaviest player wears jersey number 34.
- Ramesh Nayudu is a passer for Andhra Pradesh.
- The only single digit jersey numbers are 2 and 3.
- The player from Maharashtra is interviewed 7th.

Which of the following cannot be the correct order of the nine interviews?

- A) Andhra Pradesh, Andhra Pradesh, Gujrat, Gujrat, Madhya Pradesh, West Bengal, Maharashtra, Uttar Pradesh, Bihar
B) Andhra Pradesh, Andhra Pradesh, Madhya Pradesh, Gujrat, Gujrat, Uttar Pradesh, Maharashtra, West Bengal, Bihar
C) Andhra Pradesh, Andhra Pradesh, Gujrat, Gujrat, Madhya Pradesh, Uttar Pradesh, Maharashtra, West Bengal, Bihar
D) Gujrat, Gujrat, Bihar, Andhra Pradesh, Andhra Pradesh, Uttar Pradesh, Maharashtra, West Bengal, Madhya Pradesh

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 63

Ram, Shyam, Mohan and Geeta are playing a game of numbers. In each round, a dealer selects a number from 1 to 20 at random. Ram wins if the number selected is between 1 and 15, both inclusive; Shyam wins if the number selected is between 6 and 15, both inclusive; Mohan wins if the number selected is between 3 and 15, both inclusive; Geeta wins if the number selected is between 16 and 20, both inclusive.

If Ram wins, he earns Rs. 1000, and loses Rs. 5000 otherwise; if Shyam wins, he earns Rs. 5000, and loses Rs. 1000 otherwise; if Mohan wins, he earns Rs. 2000, and loses Rs. 2000 otherwise; if Geeta wins, she earns Rs. 10000, and loses Rs. 1000 otherwise.

For 5 rounds, the dealer selected 5 different numbers at random. After these five rounds, Ram had a loss of Rs. 1000, Shyam had a profit of Rs. 1000 and Mohan had a profit of Rs. 2000.

How many rounds did Ram win? (in numerical value)

- A) 4 B) C) D)

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 64

Ram, Shyam, Mohan and Geeta are playing a game of numbers. In each round, a dealer selects a number from 1 to 20 at random. Ram wins if the number selected is between 1 and 15, both inclusive; Shyam wins if the number selected is between 6 and 15, both inclusive; Mohan wins if the number selected is between 3 and 15, both inclusive; Geeta wins if the number selected is between 16 and 20, both inclusive.

If Ram wins, he earns Rs. 1000, and loses Rs. 5000 otherwise; if Shyam wins, he earns Rs. 5000, and loses Rs. 1000 otherwise; if Mohan wins, he earns Rs. 2000, and loses Rs. 2000 otherwise; if Geeta wins, she earns Rs. 10000, and loses Rs. 1000 otherwise.

For 5 rounds, the dealer selected 5 different numbers at random. After these five rounds, Ram had a loss of Rs. 1000, Shyam had a profit of Rs. 1000 and Mohan had a profit of Rs. 2000.

How much money did the dealer earn or lose? (in Rs.)

- A) 8000 B) C) D)

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 65

Ram, Shyam, Mohan and Geeta are playing a game of numbers. In each round, a dealer selects a number from 1 to 20 at random. Ram wins if the number selected is between 1 and 15, both inclusive; Shyam wins if the number selected is between 6 and 15, both inclusive; Mohan wins if the number selected is between 3 and 15, both inclusive; Geeta wins if the number selected is between 16 and 20, both inclusive.

If Ram wins, he earns Rs. 1000, and loses Rs. 5000 otherwise; if Shyam wins, he earns Rs. 5000, and loses Rs. 1000 otherwise; if Mohan wins, he earns Rs. 2000, and loses Rs. 2000 otherwise; if Geeta wins, she earns Rs. 10000, and loses Rs. 1000 otherwise.

For 5 rounds, the dealer selected 5 different numbers at random. After these five rounds, Ram had a loss of Rs. 1000, Shyam had a profit of Rs. 1000 and Mohan had a profit of Rs. 2000.

If Ram, Shyam and Mohan are clubbed in team A and Geeta forms team B, which team won after the 5 rounds and by how much?

- A) Team A, Rs. 6000 B) Team B, Rs. 4000 C) Team A, Rs. 4000 D) Team B, Rs. 6000

DIRECTIONS for the question: Read the information given below and answer the question that follows.

Question No. : 66

Ram, Shyam, Mohan and Geeta are playing a game of numbers. In each round, a dealer selects a number from 1 to 20 at random. Ram wins if the number selected is between 1 and 15, both inclusive; Shyam wins if the number selected is between 6 and 15, both inclusive; Mohan wins if the number selected is between 3 and 15, both inclusive; Geeta wins if the number selected is between 16 and 20, both inclusive.

If Ram wins, he earns Rs. 1000, and loses Rs. 5000 otherwise; if Shyam wins, he earns Rs. 5000, and loses Rs. 1000 otherwise; if Mohan wins, he earns Rs. 2000, and loses Rs. 2000 otherwise; if Geeta wins, she earns Rs. 10000, and loses Rs. 1000 otherwise.

For 5 rounds, the dealer selected 5 different numbers at random. After these five rounds, Ram had a loss of Rs. 1000, Shyam had a profit of Rs. 1000 and Mohan had a profit of Rs. 2000.

Which of the following statements is true?

- A) Mohan won twice as many rounds as Geeta won and lost thrice as many rounds as Ram lost
B) Shyam won half as many rounds as Geeta lost and lost as many rounds as Ram won
C) Geeta won as many rounds as Ram lost and lost as many rounds as Shyam lost
D) Ram won as many rounds as Geeta lost and lost half as many rounds as Mohan won

Section : Quantitative Ability

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 67

Two men P and Q purchased a grindstone 1 yard in diameter for Rs. 15, of which the first pays Rs. 8 and the other Rs. 7. If the axle hole is 1 foot in diameter, how many inches of the radius may P grind down before sending it to Q?

Note: There are 36 inches in a yard.

- A) 7 B) 9 C) 5 D) 3

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 68

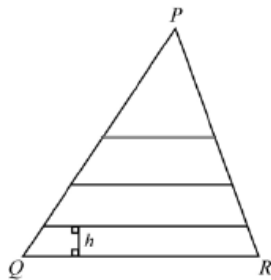
The pendulum of a clock is 2 feet 6 inches long and when at rest, its bob is 9 feet 6 inches above the ground. If the minimum distance of the extreme points between which it oscillates is 3 feet, determine the greatest height of the bob above the ground. (in feet)

- A) 10 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 69

$\triangle PQR$ has $PQ = 150$ and $PR = QR = 125$, as shown. Three line segments are drawn parallel to QR , dividing $\triangle PQR$ into four sections of equal area. The height, h , of the bottom section is closest to



- A) 16.7 B) 16.9 C) 16.5 D) 16.1

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 70

Every day Meena's husband meets her at the city railway station at 6 pm and drives her to their residence by car. One day she left early from the office and reached the railway station at 5 pm. She started walking towards her home, met her husband coming from their residence on the way and they reached home 10 minutes earlier than the usual time. For how long did she walk? (in minutes)

- A) 55 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 71

There are 200 tokens each in two boxes, numbered 1 to 200. Ram and Shyam draw tokens, exactly one token per draw, from different boxes (without replacement). In the i^{th} draw, the value of the number on the token drawn by Ram minus the value of the number on the token drawn by Shyam is noted as m_i , while the sum of the two numbers is noted as n_i .

Find the minimum possible value of $m_1 - m_2 + m_3 - m_4 \dots - m_{200}$.

- A) -20,000 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 72

There are 200 tokens each in two boxes, numbered 1 to 200. Ram and Shyam draw tokens, exactly one token per draw, from different boxes (without replacement). In the i^{th} draw, the value of the number on the token drawn by Ram minus the value of the number on the token drawn by Shyam is noted as m_i , while the sum of the two numbers is noted as n_i .

The probability that $n_1 = 65$ is the same as $n_1 =$

- A) 175 B) 307 C) 327 D) None of these

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 73

There are 10 machines in which nine machines are making tablets of the same weight 4 gm each and one machine is making tablets of weight one gm more. The machines are numbered one, two, three, ... ten. One tablet from the first machine, two from the second.... and ten from the last are picked and weighed. The total weight of all the tablets is found to be 224 gm. The number of the machine making tablets of weight 5 gram each is

- A) 4 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 74

If a brick of size $6'' \times 3'' \times 2''$ is to be used for a construction job, such that with its share of mortar the dimensions increase to 150 % of their original value, how many bricks would be required for a wall 100 yards long and 8 ft. high, the lowest course of bricks being 18 inches wide, the second course $13\frac{1}{2}$ inches wide, and the remaining courses each 9 inches wide? (1 yard = 3 ft.)

- A) 26800 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 75

A barrel contains 37 litres of beer; it has two taps, and from one tap, a jug, capacity of $\frac{1}{8}^{\text{th}}$ of a litre, is filled every 4 minutes, while from the other tap, a jug of capacity of $\frac{1}{4}^{\text{th}}$ of a litre, is filled every 6 minutes; if both jugs are filled for the first time at 12 O'clock, how much beer will be left(approx.) in the barrel at 10 minutes past 8 pm?

- A) $\frac{1}{2}$ litre B) $\frac{1}{8}$ litre C) $\frac{13}{48}$ litre D) $\frac{11}{12}$ litre

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 76

Meghna and Shaina race against each other with the winner of each race receiving x gold coins and the loser receiving y gold coins. (There are no ties and x and y are integers with $x > y > 0$.) After several races, Meghna has 42 coins and Shaina has 35 coins. Shaina has won exactly 2 races. The value of x is

- A) 4 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 77

A man, 5 ft high standing at a certain distance from a lamp post, finds that the length of his shadow is 8 ft. On moving in the direction of the shadow through 3 ft, he finds the length of his shadow is now 11 ft. Find the difference between the height of the post and the distance the man was from the post, originally. (in feet)

- A) 2 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 78

Thirty students took an exam and got 2, 3, 4 and 5 as their marks. The total marks of the 30 students was 93. The 3's were more than the 5's but less than the 4's. Also the number getting 4's was multiple of 10 and the number of 5's is a non zero even number. How many students scored three marks?

- A) 7 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 79

There is a square room which is proposed to be enlarged by throwing out a hexagonal front from one of its sides, so that three sides of the hexagon may form a bay front; what area of new flooring will be required, the side of the square being 20 ft?

- A) 135.59 sq. ft. B) 129.90 sq. ft. C) 124.60 sq. ft. D) 117.04 sq. ft.

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 80

Kamal asked Rahim to find the number of ways in which all the numbers 1, 2, 3, 4 and 5 can be rearranged without repetition such that the number n is never in the n^{th} position. For example, 25413 and 51234 are acceptable, but 12435 is not. How many such rearrangements are possible?

- A) 44 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 81

The longest side of a scalene triangle is 11. If all sides are of integral length, how many such triangles are possible?

- A) 20 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 82

Satinder went to the wholesale market to buy some vegetables and fruits for his grocery store. He bought some ashgourd, some beetroot and some apples. He had to buy at least 15 of each. The number of ashgourd had to be more than the number of Beetroot, which had to be more than the number of apples. He bought 50 vegetables and fruits in all at the following rates: 1 apple @ Rs. 3, 1 beetroot @ Rs. 2 and 1 ashgourd @ Rs. 4.

How many apples did Satinder buy?

- A) 15 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 83

Satinder went to the wholesale market to buy some vegetables and fruits for his grocery store. He bought some ashgourd, some beetroot and some apples. He had to buy at least 15 of each. The number of ashgourd had to be more than the number of Beetroot, which had to be more than the number of apples. He bought 50 vegetables and fruits in all at the following rates: 1 apple @ Rs. 3, 1 beetroot @ Rs. 2 and 1 ashgourd @ Rs. 4.

Satinder sold off all the vegetables and fruit he had bought for a profit of Rs. 38. If he had bought 17 beetroot, what was total selling price of all the vegetables and fruit? (in Rs.)

- A) 189 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 84

Satinder went to the wholesale market to buy some vegetables and fruits for his grocery store. He bought some ashgourd, some beetroot and some apples. He had to buy at least 15 of each. The number of ashgourd had to be more than the number of Beetroot, which had to be more than the number of apples. He bought 50 vegetables and fruits in all at the following rates: 1 apple @ Rs. 3, 1 beetroot @ Rs. 2 and 1 ashgourd @ Rs. 4.

If the number of ashgourd bought could have been more than or equal to the number of Beetroot bought, then what is the maximum money that Satinder could expect to save on the purchase of his basket of 50 vegetables and fruit? (in Rs.)

- A) 3 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 85

Rahim and Sahil were trying to crack a puzzle in which they were given a slip of paper with a code of two digits selected from 0, 1, 2 to 9. But the slip on which the code is handwritten allows for confusion between the top and the bottom because some of the digits are indistinguishable when read from either side. Thus, for example, the code 91 could be confused with 16. How many codes are there such that there is no possibility of any confusion?

- A) 82 B) 75 C) 80 D) 78

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 86

A car leaves city A for city B at 3:00 p.m. At 4:15 p.m., it develops engine trouble and has to reduce its speed to $\frac{5}{6}$ th of the original speed. It thus arrives at city B at 9:57 p.m. Had the engine trouble developed 45 km further, the car would have arrived at city B at 9:48 p.m. What is the original speed of the car and the distance between cities A and B?

- A) 40 kmph, 240 km B) 60 kmph, 360 km C) 60 kmph, 300 km D) 72 kmph, 360 km

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 87

The number of triplets (a, b, c) of positive integers such that

$$\frac{1}{a} + \frac{1}{b} + \frac{1}{c} = \frac{3}{4} \text{ is}$$

- A) 16 B) 25 C) 31 D) 19

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 88

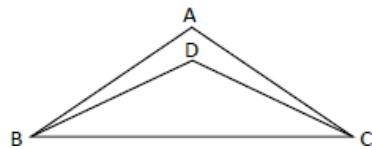
Five consecutive positive integers have the property that the sum of the second, third and fourth is a perfect square, while the sum of all five is a perfect cube. If m is the third of these five integers, then the minimum possible value of m satisfies

- A) $m \leq 200$ B) $200 < m \leq 400$ C) $400 < m \leq 600$ D) $600 < m \leq 800$

DIRECTIONS for the question : Solve the following question and mark the best possible option.

Question No. : 89

In the figure below, $\angle DBC = 2\angle ABD$, and $\angle DCB = 2\angle ACD$. If $\angle BAC = 120^\circ$, what is $\angle BDC$?



(in degrees)

- A) 140 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 90

What is the sum of all three-digit multiples of 3 or 5?

- A) 263,498 B) 230,850 C) 198,000 D) 233,168

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 91

Ramu mixes 2 litres of mineral water costing Rs. 15 per litre with 18 litres of milk that he bought for Rs. 900. After selling 2 litres of this mixture to Shamu, Ramu adds tap water so that the ratio of milk to tap water is 9:10. If tap water is free and Ramu claims to sell at cost, what is his profit?

- A) 95% B) 115% C) 104% D) 84%

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 92

A, B, C and D can each complete a piece of work in 10, 20, 30 and 40 days respectively. For the first four days, they work in distinct groups of three each. After that, they work in pairs in the order AB, BC, CD, DA, AB and so on till the work is completed. In how many days is the work completed?

- A) $6\frac{10}{19}$ days B) $9\frac{1}{5}$ days C) $7\frac{2}{3}$ days D) Cannot be determined
-

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 93

A dishonest dealer sells his goods at the cost price and still earns a profit of 25 % by under weighing. What weight does he use for a kilogram? (in grams)

- A) 800 B) C) D)

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 94

The simple interest accrued on an amount of Rs. 25,000/- at the end of three years is Rs. 7,500/-. What would be the compound interest accrued on the same amount at the same rate in the same period?

- A) Rs. 7,750/- B) Rs. 8,275/- C) Rs. 8,500/- D) Rs. 8,250/-
-

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 95

$(x - 1)$ and $(x + 1)$ are factors of $A = x^3 + ax^2 + bx + c$. When divided by $(x - 2)$, A leaves a remainder of 12. What are the values of a , b and c respectively?

- A) $a = 2, b = -1, c = -2$ B) $a = 6, b = -1, c = -2$ C) $a = -2, b = 1, c = -2$ D) $a = 4, b = 1, c = 2$

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 96

At a party, 60% of the people present are females and 40% of the people like to dance. 20 more males, all of whom like to dance, join the party so that 42% of the people at the party are now males. How many people now at the party like to dance?

- A) 232 B) 252 C) 348 D) 580
-

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 97

A 100 litre vessel contains water and milk in the ratio 2 : 3 and a 50 litre vessel contains water and milk in the ratio 3 : 2. If the contents of these vessels are mixed in the ratio 1 : 3 in a third vessel, what will be the respective ratio of milk to water in the third vessel?

- A) 12 : 13 B) 9 : 11 C) 11 : 9 D) 13 : 12

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 98

What range of values of x will satisfy $\left| \frac{10-x}{3} \right| < 2$?

- A) $4 < x < 16$ B) $-4 > x > -16$ C) $4 > x > -16$ D) $x < 16$
-

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 99

Madhu, Shilpa and Mehr along with seven other girls had reached the finals of Miss Timbuktu 2003. Initially all the girls had an average weight of 47.9 kgs. After the elimination of Madhu, the average weight got reduced to 46 kgs. If the average weight of the rest of the girls is 3kgs less than the average weight of Madhu, Shilpa and Mehr together then, Madhu's weight is (in kgs.):

- A) 50 B) 55 C) 60 D) 65

DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 100

$2n$ years ago, the age of Rajesh was one fourth the age of his father and n years ago, the age of Rajesh was one third that of his father. If n years later, the sum of the ages of Rajesh and his father will be 80 years, then the difference in the ages of Rajesh and his father is

- A) 20 years B) 30 years C) 35 years D) 40 years
-

QNo:- 1 ,Correct Answer:- C

Explanation:-

Option 3.

The passage states that the human offspring replaces reflex instinct with lessons drawn from experience and the accumulated wisdom of the tribe, channeled by only the most general of innate predispositions.

This means that the offspring is immature or not fully developed.

Hence, nearly unformed is the best answer.

QNo:- 2 ,Correct Answer:- B

Explanation:-

Option 2.

The paragraph stated states that the females submit to the dominance of one male bull elephant seal.

In the passage it is said that a female chooses a mate keeping two things in mind: how much support would she get and what genes does she think will pass onto the conceived unborn.

In case of the bull seal elephant, one male drives off all male interlopers to secure a local monopoly over insemination.

If support was what the females got from the males then many females would not accept one mating partner.

This means the females rear their kids alone.

Then the other factor, which is genes, would become a predominant factor.

Hence option 2 is the best option.

1 - sentimentality is a typical human trait - and option 1 is only stating the obvious.

3 - there are battles, but the non-alpha males do not get killed

4 - The battles mentioned are more with males than females. This behavior may actually result in putting off the females.

QNo:- 3 ,Correct Answer:- C

Explanation:-

Option 3.

As we are talking of a harem maintained by the male langur monkey, females getting an opportunity to mate with more than one is not possible and neither can she make any trade offs.

Hence option 1 and 4 are incorrect.

The blank has to be filled by some information about the langur as the next sentence starts with the word also.

So option 2 is ruled out.

If the females do not have a fixed mating season then the next sentence that the male langur has no single rutting season makes sense.

QNo:- 4 ,Correct Answer:- D

Explanation:-

Option 4.

The passage states that these males do not give their mates so much absolute fidelity as devotion... meaning they will do anything and everything to serve and protect the nest and their offspring.

Hence, if the chick needs to grow fast so as to survive the season changes and if the metabolism of the chick is high, the food intake will be enormous which cannot be sustained by one parent alone.

Hence, option 4 is the best answer.

1 - raises the issue of why chick rearing is burdensome, but does not touch on the monogamy part.

2 - The extra marital affairs of the birds do not weigh so much on the child rearing

3 - Sounds abstruse enough but its connection to child rearing is dubious.

QNo:- 5 ,Correct Answer:- D

Explanation:-

In the results of 10,000 tests, we would find 100 true positives to go with the 10 false positives. So in this case the chances that a positive test meant the he was infected would have been 10 out of 11.

QNo:- 6 ,Correct Answer:- B

Explanation:-

refer lines - My wife's letter stated that the company was turning her down because of the "results of your husband's blood test." When the added word husband's proved to be the extent of the clues the kindhearted insurance company was willing to provide about our uninsurability, I went to my doctor on a hunch and took an HIV test.

Since the company also rejected her application because of her husband's disease. HIV is a sexually transmitted disease.

1 " but this does not help him narrow down choices.

3 " Influenza means common cold " not grounds for rejecting an insurance application.

4 " Not relevant. The physician did not advise the test, the author asked for it.

QNo:- 7 ,Correct Answer:- A

Explanation:-

Of 1000 people, only 10 really have the allergy (1% of 1000 is 10)

The test is 80% right for people who have the allergy, so it will get 8 of those 10 right.

But 990 do not have the allergy, and the test will say "Yes" to 10% of them, which is 99 people it says "Yes" to wrongly (false positive)

So out of 1000 people the test says "Yes" to $(8+99) = 107$ people

As a table:

	1% have it	Test says "Yes"	Test says "No"
Have allergy	10	8	2
Don't have it	990	99	891
	1000	107	893

So 107 people get a "Yes" but only 8 of those really have the allergy:
 $8 / 107 = \text{about } 7\%$

QNo:- 8 ,Correct Answer:- B

Explanation:-

Refer to the last paragraph: But the above incident illustrates that knowledge of the false positive rate is not sufficient to determine the usefulness of a test—you must also know how the false-positive rate compares with the true prevalence of the disease.

QNo:- 9 ,Correct Answer:- C

Explanation:-

A yardstick is a measure. The author's main discussion is about a reduction in preventable deaths – or lives saved. In effective altruism you want to save as many lives as possible from the limited funds that you have. So the measure is lives saved for every dollar spent.

1 – is an assumption underlying the basis for effective altruism.

2 – the author is more concerned about death prevention than death rates.

4 – he uses the example of a guide dog to drive home the point that it is not the money, but how it is used that determines effectiveness.

QNo:- 10 ,Correct Answer:- D

Explanation:-

The repeated theme in this passage is about the number of lives where people like Gates and Ord have been able to touch.

1 – satisfaction is difficult to measure

2 – the fact that you do not differentiate cannot be the sole reason for meaningfulness

3 – the head and heart are tools used to achieve a purpose.

QNo:- 11 ,Correct Answer:- B

Explanation:-

Altruistic is selfless, or for the good of others. Hedonic means related to pleasure or sensations of pleasure.

1 – rational means thinking

3 – self-esteem means one's idea about oneself. It is as positive a word as altruistic

4 – trudge is actually a slow walk.

QNo:- 12 ,Correct Answer:- B

Explanation:-

From the passage: One of the careers that he encourages people to consider, if they have the right abilities and character, is to go into banking or finance. What will happen is that this person could have become a very good social worker, but society loses on this – as he goes in for a high paying job in banking.

- 1 – Delegation also involves a lot of work, allocation, supervision and sometimes intervention.
3 – the act of giving will actually reduce materialism.
4 – you cannot have more bankers even if everyone chose to be one. There has to be that much supply in the market for banking jobs.
-

QNo:- 13 ,Correct Answer:- B

Explanation:-

We are looking at a purchase decision, where there is very little connection with identity or lifestyle. The most mundane object on the list is the staple pin. Think about it – are you even aware of what brand you bought last or are using currently?

- 1 – A quick check is to be able to recollect ads for the product category. Yes, we have seen a lot of cooking oil ads on TV!
3 – Seems to be at first sight mundane, but for the garage owner, the tool brand is important.
4 – McDonald's in the West represents standardized food, but in India it is a 'happening' place for kids.

QNo:- 14 ,Correct Answer:- D

Explanation:-

The ratchet screwdriver effect occurs when a price or wage increases as a result of temporary pressure but fails to fall back when the pressure is removed.

Refer to the passage: For existing providers, they have to face the fact that what is innovative and exciting today may be hackneyed and dull tomorrow as new entrants enter the field with more compelling ideas and ever more engaging ways of implementing them. This makes you get tempted to mark option 2, but remember 2 is just playing on words without putting any meaning into them.

What we are looking at is something that is continually innovative and exciting.

- 1 – is just the definition of the ratchet screwdriver effect.
3 – is correct, but does not relate to the context of practices of successful themers.
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QNo:- 15 ,Correct Answer:- B

Explanation:-

A theme is to give a particular setting to a service. A religious tour is relevant to a senior citizen – and having the food and atmosphere suited to such a tour around will help build this theme.

- 1 – Too general a theme – guess that is why it is not helping increase tourist inflow. Something built around our culture, our religions would have worked better.
3 – misplaced, more suited for amusement parks.
4 – yes, they can. But building tourism around films is a different ballgame. The option does not talk about that.

QNo:- 16 ,Correct Answer:- C

Explanation:-

Is mentioned in the passage in the context of an experience economy.

The rest find mention in the context of the servicescape.

Quoted from the passage: The most notable of these components of the servicescape is the physical environment within which the service is delivered and the manner in which it is delivered.

- 1 – is actually a subset of option 4.
-

QNo:- 17 ,Correct Answer:- D

Explanation:-

When a calf eat its mothers fecal matter, the microbes get transferred to the calf's gut from the mom's gut.

1 – is taking about stimulation not microbes

2, 3 – antibiotics mean against microbes. So both these options can be ruled out.

QNo:- 18 ,Correct Answer:- B

Explanation:-

The question is asking us to compare conventional drug based therapy with microbial therapy. Tailoring a therapy for an individual is certainly a huge advantage – since it would improve the efficacy of any treatment.

The other options are advantages of microbial therapy – but do not contrast it with conventional therapy.

QNo:- 19 ,Correct Answer:- C

Explanation:-

We are looking for an argument which is relevant to this article. So it has to include some comparison with microbial therapy. By invoking the differences this option is indicating that tailor made therapies will work better with microbial than genes. Or that gene therapy will work for a very limited set of people.

1 – even if microbial genes outnumber human genes, the absolute quantity of human genetic material floating around our body is awesome.

2 and 4 represent genuine problems with gene therapy, but do not involve a comparison with microbial therapy, hence they cannot be inferred from this article.

QNo:- 20 ,Correct Answer:- C

Explanation:-

The hint is in the phrase – ‘you really know it is true.’ We believe TV more than a text or academic book.

1 – the author is indeed being funny – but that alone cannot be the implication.

2 – is a correct descriptor of CSI: Miami, but it does not talk of the ‘must be true’ part

4 – The phrase featured on hints that it is a TV serial. If it was a magazine it would be featured in.

QNo:- 21 ,Correct Answer:- B

Explanation:-

Anarchy – means lack of order. Refer to the passage: During a performance, disciples will respond to the ustad and he will go on teaching them in public. This means that, as opposed to the organised collective face a Western classical music performance represents, Indian music is intuitive, individualistic, and also very anarchic.

1 – is true to an extent because of the use of an obscure dialect, but this cannot be construed to be the reason for lack of order.

3 – this would have lead to more order, not less.

4 – variation in music cannot be considered to be unorganized music.

QNo:- 22 ,Correct Answer:- A

Explanation:-

Refer the last paragraph: With classical Indian music not having a concept of notation, it was film songs with many hundreds being sung every year that forced Indians to note music down, since it was impossible to remember every tune.

2 – not mentioned in the passage

3 – a musician could synchronise the music just by seeing what is happening on the screen.

4 – it is debatable whether scores are the only way of improving time management.

QNo:- 23 ,Correct Answer:- A

Explanation:-

The requirement here was for a short song that would appeal as much to northern as southern India.

2 – does not mention that the length had to be short

3 – not mentioned in the passage

4 – folk and western music were also influencers for Hindi film music.

QNo:- 24 ,Correct Answer:- D

Explanation:-

Refer the passage: Even in the days of the silent movies, when musicians played in halls, they had learnt to adjust. The duration and tempo of the ghazal on the harmonium had to suit the film the musician was accompanying. The gramophone preceded films. It was probably much cheaper to play a gramophone than to hire musicians for a show. But there must have been technical difficulties.

1 – is wrong. Audio is a much easier technology than video.

2 – stretches the celebration part a wee(little) bit.

3 – is correct, but this does not give the reason for the use of a live orchestra.

QNo:- 25 ,Correct Answer:- 12453

Explanation:-

The pairs of sentences that you need to spot in this case are 24, 45 and 53. Statement 2 informs us about the statement of banks 3 years ago, statement 4 tells us about the conclusion reached and statement 5 tells us about the action taken. Statement 3 then informs us about the final outcome in this case. Statement 1 comes at the start as it does not fit with any other statement and also provides a generic opening sentence for the paragraph. Hence the correct order is 12453.

QNo:- 26 ,Correct Answer:- 42531

Explanation:-

This is an extremely tricky problem which can cause a lot of troubles if you do not spot the correct pairs. The one pair that is an absolute must is 53. Statement 5 refers to Europe's current political leaders and the pronoun "they" in statement 3 refers to these leaders. This is the one conclusive pair in this case. The next step is identifying the opening sentence. We can see that statement 4 is the apt opening sentence in this case as it sets up the discussion for the other sentences. Hence the correct sequence is 42531.

QNo:- 27 ,Correct Answer:- 3

Explanation:-

You need to read each option very closely in order to identify the answer.

Option 1 is incorrect as damp squib means "a situation or event which is much less impressive than expected". Remember, the celebrations have been over the top.

Option 2 is incorrect as the phrase "not up to the mark" does not reflect the true nature of the celebrations and hysteria.

Option 3 is the correct answer as it reflects the actual situation and conveys the exact sentiment expressed by this line in the paragraph: The grasping for national pride and pseudo-psychological significance exaggerated the event and cheapened the athletes' achievement.

Option 4 is too extreme in nature. One, we do not know whether these achievements were unprecedented; second, we do not know whether the hullabaloo is completely unjustified. The extreme nature of this option helps us rule it out.

QNo:- 28 ,Correct Answer:- 513624

Explanation:-

Statement 5 is the generic opening sentence in this case. The set of connected statements is 624. Statement 6 is a lament about the situation in India, statement 2 continues this and statement 4 is the conclusion in this case. The key in this question is which statement follows 5, statement 1 or 3. Statement 3 follows statement 1 as it explains the ubiquitous and hidden character of racism. Remember, in order to determine the correct order of these two statements, you need to ask yourself: which statement explains the other one? In this case, statement C explains statement A. Thus, it follows A and the correct order is 513624

QNo:- 29 ,Correct Answer:- 314265

Explanation:-

The first pair that you should spot in this para-jumble is 31. These two are bound by the "reasoning" mentioned in statement 3. Then, statement 4 questions the two arguments illustrated in statement 1. Statement 2 answers the question raised in the pair 14. Statement 6 is connected to statement 2 as both statements make a common reference to "argument". Statement 5 is connected to statement 6 as it takes forward the sentiment expressed in statement 6. This leads us to the answer, 314265.

QNo:- 30 ,Correct Answer:- 2

Explanation:-

Option 1 is too extreme in nature and the extreme negative sentiment expressed by it is not expressed in the paragraph. Option 2 is the apt answer in this case. It reflects the general tone and tenor of the author of the passage and highlights the most essential aspect of the paragraph: the problem in the classroom is one that the whole society faces right now. Option 3 reverses the causation in this case. The problem is one that society suffers from and classrooms are not explicitly targeted. Option 4 presents incorrect information. The author at no point quotes that education has been disrupted.

QNo:- 31 ,Correct Answer:- 4

Explanation:-

When you read the answer options for this question, be careful not to be misled by phrases that are directly picked up from the paragraph. These are meant to create diversions and lead you to select answer options that are not correct. Also, remember that the paragraph mentions that the system of patronage for art never quite recovered from the blow it received when World War I broke out. The paragraph does not state that art received this blow; it is the system of patronage that underwent the change. This line of thinking helps us rule out options 1, 2 and 3. Option 4 correctly states what is intended by the author of the passage.

QNo:- 32 ,Correct Answer:- 2

Explanation:-

Statements 4-1-3 form the set of connected statements (in that order). Statement 2 is clearly the odd one out as it introduces a point about the future, something which does not concern the other three statements in the given case.

QNo:- 33 ,Correct Answer:- 3

Explanation:-

In the given case, statements 4-1-2 form the set of connected statements. These are linked by the common subject of imagination and human history. Statement 3 is the odd one out here as it shifts the focus on Harari and discusses something which is absent from the other three statements.

QNo:- 34 ,Correct Answer:- 4

Explanation:-

In the given case, statements 3-1-2 form the pair of connected statements that revolve around the sentiment of dismissal of workers and how it should be treated. Statement 4 introduces a term for the same, rightsizing, something which is missing from the discussion in the other three statements. This makes option 4 the correct answer in the given case.

QNo:- 35 ,Correct Answer:- C

Explanation:-

1. According to the information a, the country A has the 7th rank in column 5, so it will have the highest rank in column 1 with the figure 235.4.

2. If we arrange all the figures in column 1 from highest to lowest we find that:

Rank 1: 235.4 - A

Rank 2: 193.6 - B

Rank 3: 175.3 – C or H or J

Rank 4: 166.2 - E

Rank 5: 145.7 - G

Rank 6: 140 - D

Rank 7: 134.4 - F

Rank 8: 113.5 - C or H or J

Rank 9: 95.2 - I

Rank 10: 62.7 - C or H or J

3. At present we are not sure about the exact ranks of countries C or H or J. But ranks 5 and 6 are clear. Country G has rank 5 and country D has rank 6. So according to information b, in column 3 country D has figures 20.9 and country G has figures 38.5.

4. According to condition b, figure 7.3 is the lowest and as country B has rank 2 in column 1 it should be assigned to it in column 3. The remaining figure of 25.1 must then be assigned to country I in column 3. Now the final ranking of column 3 can be done.

5. From the table it can be found that debt to GNP in column 2 is 50 for countries A and C as the difference in figures between the debt services in column 3 for these 2 countries is 52, according to information e.

6. According to condition c, as rank 5 is for country G in column 1 & the other country with the same debt to GNP of 77 could be either C or H or J.

7. In column 5, rank 9 is assigned to countries C and E. Country E is ranked 4th in column 1, so according to information g, country C must have the 3rd rank in column 1. So country C will have the figure 17.6 in column 4.

8. According to condition a, the country with 2nd last rank in column 2 has the 8th rank in column 1. So country H will have the figure 4.2 in column 4. The remaining figure of 13.8 goes to country E.

9. As country C has rank 3 and country H has rank 8 in column 1, rank 10 necessarily goes to country J. So in column 2 it will have a debt to GNP of 77.

Now using the above information, the table can be completed as follows:

Country	Name	Column 1	Column 2	Column 3	Column 4	Column 5	
		Total External Debt (US \$ Billion)	Debt to GNP	Debt Service	Short term debt to external debt	Concessional debt to total debt	Correct Figures
A	Brazil	235.4	50	63.8	8.3	1.4	7
B	China	193.6	15	7.3	37.7	16.8	4
C	Russian Federation	175.3	50	11.8	17.6	0.8	9
D	Mexico	140	23	20.9	6.6	0.9	8
E	Argentina	166.2	104	37.9	13.8	0.8	9
F	Indonesia	134.4	80	26	17	27.4	2
G	Turkey	145.7	77	38.5	15.8	3.5	6
H	India	113.57	22	18.1	4.2	37.8	1
I	Poland	95.2	49	25.1	20.5	7.1	5

J	Philippines	62.7	77	22.1	9.9	22.6	3
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Thus, Argentina has the highest debt to GNP value i.e., 104.

QNo:- 36 ,Correct Answer:- D

Explanation:-

1. According to the information a, the country A has the 7th rank in column 5, so it will have the highest rank in column 1 with the figure 235.4.

2. If we arrange all the figures in column 1 from highest to lowest we find that:

Rank 1: 235.4 - A

Rank 2: 193.6 - B

Rank 3: 175.3 – C or H or J

Rank 4: 166.2 - E

Rank 5: 145.7 - G

Rank 6: 140 - D

Rank 7: 134.4 - F

Rank 8: 113.5 - C or H or J

Rank 9: 95.2 - I

Rank 10: 62.7 - C or H or J

3. At present we are not sure about the exact ranks of countries C or H or J. But ranks 5 and 6 are clear. Country G has rank 5 and country D has rank 6. So according to information b, in column 3 country D has figures 20.9 and country G has figures 38.5.

4. According to condition b, figure 7.3 is the lowest and as country B has rank 2 in column 1 it should be assigned to it in column 3. The remaining figure of 25.1 must then be assigned to country I in column 3. Now the final ranking of column 3 can be done.

5. From the table it can be found that debt to GNP in column 2 is 50 for countries A and C as the difference in figures between the debt services in column 3 for these 2 countries is 52, according to information e.

6. According to condition c, as rank 5 is for country G in column 1 & the other country with the same debt to GNP of 77 could be either C or H or J.

7. In column 5, rank 9 is assigned to countries C and E. Country E is ranked 4th in column 1, so according to information g, country C must have the 3rd rank in column 1. So country C will have the figure 17.6 in column 4.

8. According to condition a, the country with 2nd last rank in column 2 has the 8th rank in column 1. So country H will have the figure 4.2 in column 4. The remaining figure of 13.8 goes to country E.

9. As country C has rank 3 and country H has rank 8 in column 1, rank 10 necessarily goes to country J. So in column 2 it will have a debt to GNP of 77.

Now using the above information, the table can be completed as follows:

Country	Name	Column 1	Column 2	Column 3	Column 4	Column 5	
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F	Indonesia	134.4	80	26	17	27.4	2
G	Turkey	145.7	77	38.5	15.8	3.5	6
H	India	113.57	22	18.1	4.2	37.8	1
I	Poland	95.2	49	25.1	20.5	7.1	5

J	Philippines	62.7	77	22.1	9.9	22.6	3
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Thus, it can be observed that none of the given countries has the same rank. Hence answer is none of these.

QNo:- 37 ,Correct Answer:- D

Explanation:-

1. According to the information a, the country A has the 7th rank in column 5, so it will have the highest rank in column 1 with the figure 235.4.
2. If we arrange all the figures in column 1 from highest to lowest we find that:
Rank 1: 235.4 - A
Rank 2: 193.6 - B
Rank 3: 175.3 - C or H or J
Rank 4: 166.2 - E
Rank 5: 145.7 - G
Rank 6: 140 - D
Rank 7: 134.4 - F
Rank 8: 113.5 - C or H or J
Rank 9: 95.2 - I
Rank 10: 62.7 - C or H or J
3. At present we are not sure about the exact ranks of countries C or H or J. But ranks 5 and 6 are clear. Country G has rank 5 and country D has rank 6. So according to information b, in column 3 country D has figures 20.9 and country G has figures 38.5.
4. According to condition b, figure 7.3 is the lowest and as country B has rank 2 in column 1 it should be assigned to it in column 3. The remaining figure of 25.1 must then be assigned to country I in column 3. Now the final ranking of column 3 can be done.
5. From the table it can be found that debt to GNP in column 2 is 50 for countries A and C as the difference in figures between the debt services in column 3 for these 2 countries is 52, according to information e.
6. According to condition c, as rank 5 is for country G in column 1 & the other country with the same debt to GNP of 77 could be either C or H or J.
7. In column 5, rank 9 is assigned to countries C and E. Country E is ranked 4th in column 1, so according to information g, country C must have the 3rd rank in column 1. So country C will have the figure 17.6 in column 4.
8. According to condition a, the country with 2nd last rank in column 2 has the 8th rank in column 1. So country H will have the figure 4.2 in column 4. The remaining figure of 13.8 goes to country E.
9. As country C has rank 3 and country H has rank 8 in column 1, rank 10 necessarily goes to country J. So in column 2 it will have a debt to GNP of 77.

Now using the above information, the table can be completed as follows:

Country	Name	Column 1	Column 2	Column 3	Column 4	Column 5	
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G	Turkey	145.7	77	38.5	15.8	3.5	6
H	India	113.57	22	18.1	4.2	37.8	1
I	Poland	95.2	49	25.1	20.5	7.1	5
J	Philippines	62.7	77	22.1	9.9	22.6	3

Hence, the required difference is $63.8 - 7.3 = 56.5$

QNo:- 38 ,Correct Answer:- C

Explanation:-

1. According to the information a, the country A has the 7th rank in column 5, so it will have the highest rank in column 1 with the figure 235.4.
2. If we arrange all the figures in column 1 from highest to lowest we find that:
 Rank 1: 235.4 - A
 Rank 2: 193.6 - B
 Rank 3: 175.3 – C or H or J
 Rank 4: 166.2 - E
 Rank 5: 145.7 - G
 Rank 6: 140 - D
 Rank 7: 134.4 - F
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 Rank 9: 95.2 - I
 Rank 10: 62.7 - C or H or J
3. At present we are not sure about the exact ranks of countries C or H or J. But ranks 5 and 6 are clear. Country G has rank 5 and country D has rank 6. So according to information b, in column 3 country D has figures 20.9 and country G has figures 38.5.
4. According to condition b, figure 7.3 is the lowest and as country B has rank 2 in column 1 it should be assigned to it in column 3. The remaining figure of 25.1 must then be assigned to country I in column 3. Now the final ranking of column 3 can be done.
5. From the table it can be found that debt to GNP in column 2 is 50 for countries A and C as the difference in figures between the debt services in column 3 for these 2 countries is 52, according to information e.
6. According to condition c, as rank 5 is for country G in column 1 & the other country with the same debt to GNP of 77 could be either C or H or J.
7. In column 5, rank 9 is assigned to countries C and E. Country E is ranked 4th in column 1, so according to information g, country C must have the 3rd rank in column 1. So country C will have the figure 17.6 in column 4.
8. According to condition a, the country with 2nd last rank in column 2 has the 8th rank in column 1. So country H will have the figure 4.2 in column 4. The remaining figure of 13.8 goes to country E.
9. As country C has rank 3 and country H has rank 8 in column 1, rank 10 necessarily goes to country J. So in column 2 it will have a debt to GNP of 77.

Now using the above information, the table can be completed as follows:

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I	Poland	95.2	49	25.1	20.5	7.1	5
J	Philippines	62.7	77	22.1	9.9	22.6	3

Thus, it can be observed that:

Brazil has 1st rank in column 1 but no last rank.

Mexico has neither 1st nor last rank in any of the columns.
 India is 1st in column 5 And last in column 4. So, this is the correct option.
 Philippines is last in column 1 but not first in any of the columns.

QNo:- 39 ,Correct Answer:- B

Explanation:-

From (iii), the score in one of the matches is India – Pakistan is 4 – 2.

From (iv), the score of one of the matches is 1 – 0.

From (ii) and (iii), by looking at the number of goals scored by India, the only possibility of score in 4th match is 4 – 2. In one match the score is 8 – 4. And from (vi) the score of 2nd match is 6 – 6. The score in the first match will be 8 – 4.

As 3rd match is played in India, 1-0 must be the score of the match in Pakistan i.e. the 5th match and 5 – 1 is the score of the 3rd match.

	India	Pakistan	Venue
1 st	8	4	Pakistan
2 nd	6	6	India
3 rd	5	1	India
4 th	4	2	Pakistan
5 th	1	0	Pakistan

From the table it is clear that Pakistan scored 1 goal in 3rd match.

QNo:- 40 ,Correct Answer:- 8

Explanation:-

From (iii), the score in one of the matches is India – Pakistan is 4 – 2.

From (iv), the score of one of the matches is 1 – 0.

From (ii) and (iii), by looking at the number of goals scored by India, the only possibility of score in 4th match is 4 – 2. In one match the score is 8 – 4. And from (vi) the score of 2nd match is 6 – 6. The score in the first match will be 8 – 4.

As 3rd match is played in India, 1-0 must be the score of the match in Pakistan i.e. the 5th match and 5 – 1 is the score of the 3rd match.

	India	Pakistan	Venue
1 st	8	4	Pakistan
2 nd	6	6	India
3 rd	5	1	India
4 th	4	2	Pakistan
5 th	1	0	Pakistan

India scored 8 goals in the first match.

QNo:- 41 ,Correct Answer:- B

Explanation:-

From (iii), the score in one of the matches is India – Pakistan is 4 – 2.

From (iv), the score of one of the matches is 1 – 0.

From (ii) and (iii), by looking at the number of goals scored by India, the only possibility of score in 4th match is 4 – 2. In one match the score is 8 – 4. And from (vi) the score of 2nd match is 6 – 6. The score in the first match will be 8 – 4.

As 3rd match is played in India, 1-0 must be the score of the match in Pakistan i.e. the 5th match and 5 – 1 is the score of the 3rd match.

	India	Pakistan	Venue
1 st	8	4	Pakistan
2 nd	6	6	India
3 rd	5	1	India
4 th	4	2	Pakistan
5 th	1	0	Pakistan

The 2nd & 3rd matches are played in India.

QNo:- 42 ,Correct Answer:- A

Explanation:-

From (iii), the score in one of the matches is India – Pakistan is 4 – 2.

From (iv), the score of one of the matches is 1 – 0.

From (ii) and (iii), by looking at the number of goals scored by India, the only possibility of score in 4th match is 4 – 2. In one match the score is 8 – 4. And from (vi) the score of 2nd match is 6 – 6. The score in the first match will be 8 – 4.

As 3rd match is played in India, 1-0 must be the score of the match in Pakistan i.e. the 5th match and 5 – 1 is the score of the 3rd match.

	India	Pakistan	Venue
1 st	8	4	Pakistan
2 nd	6	6	India
3 rd	5	1	India
4 th	4	2	Pakistan
5 th	1	0	Pakistan

In 2nd match Pakistan scored 6 goals.

QNo:- 43 ,Correct Answer:- C

Explanation:-

Since no student failed in DP1, all 48 students in 2010 moved to DP2 in 2011.

Since the number of DP2 students in 2011 is 54 and only 48 have moved from DP1, we know that $54 - 48 = 6$ students failed DP2 in 2010 and the remaining $36 - 6 = 30$ passed.

So, the pass percentage is $30/36 = 83.33\%$.

QNo:- 44 ,Correct Answer:- 20

Explanation:-

MYP5 had 64 students in 2010. Since all the DP1 students in 2010 have passed, all the DP1 students in 2011 are MYP5 students who passed in 2010. So, $64 - 56 = 8$ MYP5 students failed in 2010.

There are 60 MYP5 students in 2011. Since 8 of these have failed in 2010, the remaining $60 - 8 = 52$ students are those who passed MYP4 in 2010. Since MYP4 had 72 students in 2010 and only 52 of them passed, 20 MYP4 students failed in 2010.

QNo:- 45 ,Correct Answer:- 122

Explanation:-

Since all 48 students of DP1 in 2010 have passed, the number of DP2 students in 2011 should have been 48. Since there are 54 DP2 students in 2011, it means that $54 - 48 = 6$ DP2 students failed in 2010. Of the 64 MYP5 students in 2010, only 56 moved to DP1 in 2011. So, $64 - 56 = 8$ MYP5 students failed in 2010. MYP5 had 60 students in 2011, of which 8 students were those who had failed MYP5 in 2010. So, the number of students who moved from MYP4 to MYP5 was $60 - 8 = 52$. This means that of the 72 MYP4 students in 2010, $72 - 52 = 20$ failed. MYP4 had 70 students in 2011, of which 20 students were those who had failed MYP4 in 2010. So, the number of students who moved from MYP4 to MYP5 was $70 - 20 = 50$. This means that of the 84 MYP3 students in 2010, $84 - 50 = 34$ failed. MYP3 had 100 students in 2011, of which 34 students were those who had failed MYP3 in 2010. So, the number of students who moved from MYP2 to MYP3 was $100 - 34 = 66$. This means that of the 120 MYP2 students in 2010, $120 - 66 = 54$ failed. Thus the total number of students who failed in 2010 was $6 + 8 + 20 + 34 + 54 = 122$.

QNo:- 46 ,Correct Answer:- B

Explanation:-

Since each package contains at least 1 novel, the maximum number of novels in any package is 4. If the number of games in a particular package equals the number of novels in that package, then the only possibility for (G, J, N) is (1, 3, 1). The other 2 packages must contain the remaining 3 jigsaw puzzles, i.e., 2 in one and 1 in the other. The package that has 2J, can have either 2G or 1G and the package that has 1J has 1 G. The possibilities are:

Package 1	Package 2	Package 3
1G, 3J, 1N	1G, 2J, 2N	1G, 1J, 3N
1G, 3J, 1N	2G, 2J, 1N	1G, 1J, 3N

Since there are 2 possibilities for package 2 and only 1 for package 3, the best answer is option B.

QNo:- 47 ,Correct Answer:- A

Explanation:-

The packages that contain 2 novels need another 3 items. Since the number of games cannot be greater than the number of jigsaw puzzles, these packages must contain 2 jigsaw puzzles and 1 game each. The 3rd package could contain either 1 or 2 novels. So, the possibilities are:

Package 1	Package 2	Package 3
1G, 2J, 2N	1G, 2J, 2N	2G, 2J, 1N
1G, 2J, 2N	1G, 2J, 2N	1G, 2J, 2N

So, the correct answer is option A.

QNo:- 48 ,Correct Answer:- C

Explanation:-

If all novels are used in the 3 packages and each package must have at least 1 novel, the only possibilities are (2, 2, 2), (3, 2, 1) or (4, 1, 1). Based on these, the possibilities are:

Package 1	Package 2	Package 3
1G, 2J, 2N	1G, 2J, 2N	1G, 2J, 2N
0G, 2J, 3N	1G, 2J, 2N	2G, 2J, 1N
1G, 1J, 3N	1G, 2J, 2N	1G, 3J, 1N
1G, 1J, 3N	0G, 3J, 2N	2G, 2J, 1N
0G, 1J, 4N	2G, 2J, 1N	1G, 3J, 1N

So, the difference $|J - G| = 0, 1, 2$ or 3 . Thus the difference cannot be 4 .

QNo:- 49 ,Correct Answer:- B

Explanation:-

The growth rate for the period 1995 – 96 and 1996 – 97 can be calculated from the graph.

In 1996 – 97, GDP was Rs. 2,90,000 crore and in the year 1995 – 96, the same was 2,50,000 crore.

Thus the percentage growth would be $= \frac{290-250}{250} = \frac{40}{250} = 16\%$. Now if the same growth is maintained for the subsequent year, then GDP in 1997 – 98 $= 290 \times 1.16 \approx 336$.

The proportion of Agriculture and Trade and Transport $= (29 + 42) = 71 \%$.

Hence in value terms, the Agriculture and Trade and Transport would be $(336 \times 71 \%) \approx 238,000$ crore

Hence the nearest answer as per options is Rs. 239,000 crore.

QNo:- 50 ,Correct Answer:- D

Explanation:-

The angle subtended in the pie is 144° . 1 % of the pie is equal to 3.6 degrees. Thus, $\frac{144}{3.6} = 40\%$. Hence, the

contribution of the Mining and the Others is $250 \times 40 \% = 1,00,000$ crores. Construction forms 16 % of this value, thus $1,00,000 \times 16 \% = 16,000$ crore.

QNo:- 51 ,Correct Answer:- C

Explanation:-

From the line graph, it can be seen that the GDP for the year 1989 – 90 was Rs. 2,00,000 crore.

Thus Trade and Transport was $2,00,000 \times 30 \%$

$= 60,000$ crore. However in the year 1996 – 97, the same was $2,90,000 \times 42 \% = 1,21,800$ crore.

Thus the increase in percentage terms would be $\frac{121800-60000}{60000} = 103\%$. The closest of the alternatives is 100 %.

QNo:- 52 ,Correct Answer:- C

Explanation:-

The GDP in the year 1997 – 98 with an increase of 15 % over the previous year would be $= 2,90,000 \times 1.15 = 3,33,500$. And if the share of the Agriculture in this is 40 %, then Agriculture in terms of value would in the year 1997 – 98 be $= 40 \%$ of $3,33,500 = \text{Rs. } 1,33,400$ crore.

QNo:- 53 ,Correct Answer:- 23

Explanation:-

If R scored 11 points in 2nd round, he must have had 5 aims and of these, there must have been exactly 2 misses. Hence he gets 6 aims in the third round. Now total aims so far = 3 + 5 + 6 = 14 aims. Hence he cannot have more than (21 - 14) = 7 aims in the next round. He must have had either 3, 4 or 5 shots in the third round.
He scored a maximum of $5 \times 5 - 1 \times 2 = 23$ points in the third round.

QNo:- 54 ,Correct Answer:- A

Explanation:-

The score of 4 points is possible only when the number of shots is two and number of misses is three. This implies that he had five aims in the third round.

⇒ He had 3,4 or 5 aims in the second round.

Choice (1): A score of 11 is possible when the number of hits is 3 and the number of misses is 2. This implies he had more than 50% of shots in the second round. In such a case, the number of aims in the third round should be six. This contradicts the given data that he had four points in the third round. Hence, a score 11 in the second round is not possible.

QNo:- 55 ,Correct Answer:- 35

Explanation:- It says P scored 8 points in 2nd round implies P got 2 shots and 1 miss implies P had 3 aims in the 2nd round!! Which further means that as he had 3 aims in 1st round, he got only 1shot n 2 misses!!

It means Q had only 1shot in the 3rd round!! Now let's analyze case of Q: Round 1: aims - 3, shots - 3, misses - 0!! So Round 2: aims - 5, shots - 5, misses - 0. Now let's discuss round 3, he would have 7 aims, shots - 1 and misses - 6! So in the 4th round, he would have 7 aims and if gets all 7 shots, he can score a maximum of 35 points!!

Q(1st round): aims - 3, shots - 3, miss - 0

Q(2nd round): aims - 5, shots - 5, miss - 0

Q(3rd round): aims - 7, shots - 1, miss = 6

So Q would have 7 aims in the 4th round, if he gets all shots, he can score a maximum of 35 points!

QNo:- 56 ,Correct Answer:- D

Explanation:-

The maximum score can be obtained in the following case:

1 st round-3 aims	√	√	×				
2 nd round-4 aims	√	√	√	√			
3 rd round-6 aims	√	√	√	√	√	×	
4 th round - 7 aims	√	√	√	√	√	√	√

√ → shot; X → miss
Total = $18 \times 5 - 2 \times 2 = 86$

QNo:- 57 ,Correct Answer:- C

Explanation:-

The number of aims for each of P, Q, R and S is different in the second round. Hence, the number of aims for second round for each person is one among zero, 3, 4, and 5. Now, let everyone have no misses in any round. Then one of the players will have 3, 5,

7 and 9 shots in all. i.e. 120 points.

QNo:- 58 ,Correct Answer:- A

Explanation:-

	Burglary	Murder	Dacoity
Ranga			x
Shamsher	x		
Mallu			x
Kittu		x	
Billa	x		
Danny		x	

Ranga could be with Mallu, Kittu or Billa. But as Mallu and Kittu claim to be with Ranga, Ranga was with Billa and they committed the murder. Dacoity would be committed by Shamsher, Kittu or Danny. From [B], [C], [D] and [F], Shamsher was with Kittu and they committed the dacoity.

Danny was with Mallu and they committed the burglary.

QNo:- 59 ,Correct Answer:- B

Explanation:-

	Burglary	Murder	Dacoity
Ranga			x
Shamsher	x		
Mallu			x
Kittu		x	
Billa	x		
Danny		x	

Ranga could be with Mallu, Kittu or Billa. But as Mallu and Kittu claim to be with Ranga, Ranga was with Billa and they committed the murder. Dacoity would be committed by Shamsher, Kittu or Danny. From [B], [C], [D] and [F], Shamsher was with Kittu and they committed the dacoity.

Danny was with Mallu and they committed the burglary.

QNo:- 60 ,Correct Answer:- D

Explanation:-

Sno.	Name	Team, Place	Jersey	Features
1	David Disouza	AP	31	3 pt Shooter
2	Ramesh Nayudu	AP	2/3(1 digit)	Passer
3	Subhash Divyundu / Jayesh Patel	Gujrat	34 / 40	Heaviest / ---
4	Jayesh Patel / Subhash Divyundu	Gujrat	40 / 34	--- / Heaviest
5		MP / BR	2digit	
6		UP	2/3(1 digit)	
7		Mahrashtra	(2 digit)	

From the above table,	8	Rahul Jha	WB	(2 digit)	Dunker
	9		BR / MP		

we know that the player who is interviewed 2nd is Ramesh Nayudu, who wears jersey number 2 or 3 and is a passer for Andhra Pradesh.

Since neither Rahul Jha nor the eldest player is interviewed 2nd, the best answer is option D.

QNo:- 61 ,Correct Answer:- D

Explanation:-

Since Anil Thakur, Akshay Kumar and Sachdev Sharma does not belong to either AP or Gujarat, and Andhra Pradesh or Gujrat are interviewed one after the other, we can conclude that they belong to Madhya Pradesh, Uttar Pradesh and Maharashtra respectively.

Now, jersey number 2 could be worn by Ramesh Nayudu who is a passer for Andhra Pradesh, or by Akshay Kumar who plays for Uttar Pradesh.

We do not know the speciality of Akshay Kumar.

In the absence of more information, there is a possibility that he is a dunker.

Anil Thakur, who plays for Madhya Pradesh definitely has a 2-digit jersey number and could therefore not be wearing jersey number 2.

QNo:- 62 ,Correct Answer:- A

Explanation:-

It is specified in the data that the players from Uttar Pradesh, Maharashtra and West Bengal were interviewed one after the other in that order.

This is not true in option A and must therefore be the correct answer.

QNo:- 63 ,Correct Answer:- 4

Explanation:-

Each round, Ram either wins Rs. 1000 or loses Rs. 5000. Since he has lost Rs. 1000 after 5 rounds, he must have won 4 rounds and lost 1 round. Each round, Shyam either wins Rs. 5000 or loses Rs. 1000. Since he has won Rs. 1000 after 5 rounds, he must have won 1 round and lost 4 rounds. Each round, Mohan either wins Rs. 2000 or loses Rs. 2000. Since he has won Rs. 2000 after 5 rounds, he must have won 3 rounds and lost 2 rounds. For the 4 rounds that Ram won, we know that the dealer must have selected a number between 1 and 15, both inclusive and for the 1 round that Ram lost, the dealer must have selected a number between 16 and 20, both inclusive. This means that Geeta lost 4 rounds and won 1 round. We can now tabulate the data as shown.

	Round		Money (Rs.)		Total
	W	L	W	L	
Ram	4	1	4000	5000	-1000
Shyam	1	4	5000	4000	1000
Mohan	3	2	6000	4000	2000
Geeta	1	4	10000	4000	6000

Ram won 4 rounds.

QNo:- 64 ,Correct Answer:- 8000

Explanation:-

Each round, Ram either wins Rs. 1000 or loses Rs. 5000. Since he has lost Rs. 1000 after 5 rounds, he must have won 4 rounds and lost 1 round. Each round, Shyam either wins Rs. 5000 or loses Rs. 1000. Since he has won Rs. 1000 after 5 rounds, he must have

won 1 round and lost 4 rounds. Each round, Mohan either wins Rs. 2000 or loses Rs. 2000. Since he has won Rs. 2000 after 5 rounds, he must have won 3 rounds and lost 2 rounds. For the 4 rounds that Ram won, we know that the dealer must have selected a number between 1 and 15, both inclusive and for the 1 round that Ram lost, the dealer must have selected a number between 16 and 20, both inclusive. This means that Geeta lost 4 rounds and won 1 round. We can now tabulate the data as shown.

	Round		Money (Rs.)		Total
	W	L	W	L	
Ram	4	1	4000	5000	â€"1000
Shyam	1	4	5000	4000	1000
Mohan	3	2	6000	4000	2000
Geeta	1	4	10000	4000	6000

Referring to the total column above, the 4 players together won $\text{â€"1000} + 1000 + 2000 + 6000 = \text{Rs. } 8000$. This means that the dealer lost Rs. 8000.

QNo:- 65 ,Correct Answer:- B

Explanation:-

Each round, Ram either wins Rs. 1000 or loses Rs. 5000. Since he has lost Rs. 1000 after 5 rounds, he must have won 4 rounds and lost 1 round. Each round, Shyam either wins Rs. 5000 or loses Rs. 1000. Since he has won Rs. 1000 after 5 rounds, he must have won 1 round and lost 4 rounds. Each round, Mohan either wins Rs. 2000 or loses Rs. 2000. Since he has won Rs. 2000 after 5 rounds, he must have won 3 rounds and lost 2 rounds. For the 4 rounds that Ram won, we know that the dealer must have selected a number between 1 and 15, both inclusive and for the 1 round that Ram lost, the dealer must have selected a number between 16 and 20, both inclusive. This means that Geeta lost 4 rounds and won 1 round. We can now tabulate the data as shown.

	Round		Money (Rs.)		Total
	W	L	W	L	
Ram	4	1	4000	5000	-1000
Shyam	1	4	5000	4000	1000
Mohan	3	2	6000	4000	2000
Geeta	1	4	10000	4000	6000

Ram, Shyam and Mohan together win Rs. 2000 and Geeta wins Rs. 6000. So, Team B wins by Rs. 4000.

QNo:- 66 ,Correct Answer:- C

Explanation:-

Each round, Ram either wins Rs. 1000 or loses Rs. 5000. Since he has lost Rs. 1000 after 5 rounds, he must have won 4 rounds and lost 1 round. Each round, Shyam either wins Rs. 5000 or loses Rs. 1000. Since he has won Rs. 1000 after 5 rounds, he must have won 1 round and lost 4 rounds. Each round, Mohan either wins Rs. 2000 or loses Rs. 2000. Since he has won Rs. 2000 after 5 rounds, he must have won 3 rounds and lost 2 rounds. For the 4 rounds that Ram won, we know that the dealer must have selected a number between 1 and 15, both inclusive and for the 1 round that Ram lost, the dealer must have selected a number between 16 and 20, both inclusive. This means that Geeta lost 4 rounds and won 1 round. We can now tabulate the data as shown.

	Round		Money (Rs.)		Total
	W	L	W	L	

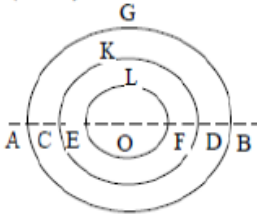
Ram	4	1	4000	5000	-1000
Shyam	1	4	5000	4000	1000
Mohan	3	2	6000	4000	2000
Geeta	1	4	10000	4000	6000

Geeta won 1 round and Ram lost 1 round. Geeta lost 4 rounds and Shyam lost 4 rounds. So option 3 is correct.

QNo:- 67 ,Correct Answer:- C

Explanation:-

Let AGB represents a section of the grindstone, and let AB be the diameter. Let O be the centre of the circle AGB. Let the section of the axle hole be represented by the circle ELF. Then $AB = 1yd = 36$ inches and $EF = 1$ foot = 12 inches. Let AC be the width of the portion ground down by the first man and let it measures x inches. Then $OC = (18 - x)$ inches. Now the area of the portion ground by the first man = $\pi\{18^2 - (18 - x)^2\}$.



Since AC is the width of the portion ground by the first man, CE must be the width of the portion ground by the second man.

Hence the area of the portion ground by the second man = $\pi\{(18 - x)^2 - 6^2\}$ [as $OC = (18 - x)$ inches and

$OE = 6$ inches]. Since the men pay Rs. 8 and Rs. 7 respectively towards the price, the area of the portion the first man is entitled to grind must be $8/7$ of the area of the portion the second man is entitled to grind.

$$\therefore \pi\{18^2 - (18 - x)^2\} = (8/7) \times \pi\{(18 - x)^2 - 6^2\}$$

$$\Rightarrow 7\{18^2 - (18 - x)^2\} = 8\{(18 - x)^2 - 6^2\}$$

$$\Rightarrow 15(18 - x)^2 = 7 \times 18^2 + 6^2 \times 8$$

$$\Rightarrow (18 - x)^2 = \frac{6^2 \times 71}{15} \Rightarrow (18 - x)^2 = \frac{2 \times 6 \times 71}{5} \Rightarrow (18 - x)^2 = \frac{4 \times 213}{5}$$

$$\Rightarrow 18 - x = 2\sqrt{\frac{213}{5}} = 13.0537 \text{ nearly,}$$

$$\therefore x = (18 - 13.05) \text{ in.} = 4.95 \text{ in.} \sim 5 \text{ in.}$$

QNo:- 68 ,Correct Answer:- 10

Explanation:-

Let OA be the position of the pendulum, when at rest. A being the bob and the length OA being 2 feet 6 inches. Let B and C be the two extreme points between which the pendulum oscillates, BC being 3 feet. Then BAC is the arc of a circle in which the bob moves, the centre of the circle being at O and radius being OA. Let EDF represents the ground.

Then the distance of A above the ground is 9 feet 6 inches. The greatest distance of the bob above the ground is given by BE or CF.

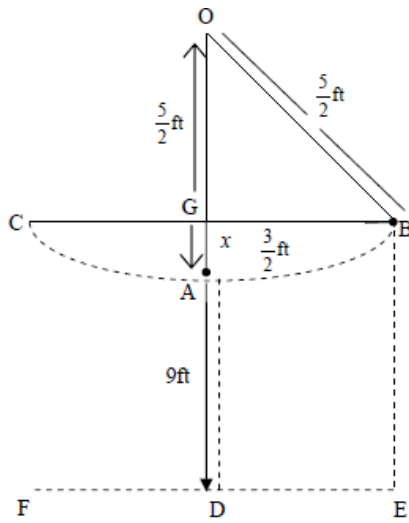
Now, AG is the height of the arc BAC. Let AG measure x feet.

Then $OG = OA \hat{=} AG = 2$ feet 6 inches $\hat{=} x$ feet = $(5/2 \hat{=} x)$ feet. Also $BG = \hat{=} \frac{1}{2} BC = 3/2$ feet

$$\begin{aligned} \text{Then in the right-angled } \triangle OBG, OB^2 &= OG^2 + BG^2 \Rightarrow \left(\frac{5}{2}\right)^2 - \left(\frac{5}{2} - x\right)^2 + \left(\frac{3}{2}\right)^2 \Rightarrow \left(\frac{5}{2} - x\right)^2 - \left(\frac{3}{2}\right)^2 = 4 \\ &\Rightarrow \left(\frac{5}{2}\right)^2 - \left(\frac{5}{2} - x\right)^2 + \left(\frac{3}{2}\right)^2 \Rightarrow \frac{5}{2} - x = 2 \Rightarrow x = \frac{1}{2} \end{aligned}$$

Therefore, $x = 6$ inches or $AG = 6$ inches.

But $GD = AG + AD, \hat{=} GD = 6$ inches + 9 feet 6 inches = 10 feet. $\hat{=} BE = 10$ feet.



QNo:- 69 ,Correct Answer:- D

Explanation:-

Draw $RS \perp PQ$ (RS will bisect PQ because $PR = QR$) $RS = \sqrt{PR^2 - PS^2} = \sqrt{125^2 - 75^2} = 100$

Area of $\Delta PQR = \frac{1}{2} \times 150 \times 100 = 7500$

As per figure $\Delta PQR \sim \Delta PUV$

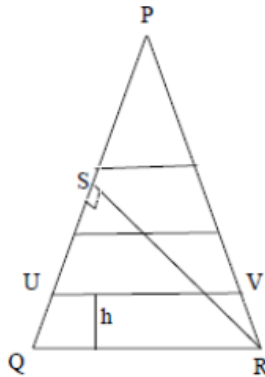
By similarity = $\frac{ar|PQR|}{ar|PUV|} = \left(\frac{QR}{UV}\right)^2 = \frac{4}{3}$

$\Rightarrow UV = \frac{\sqrt{3}}{2} \times QR = \frac{\sqrt{3}}{2} \times 125 = \frac{125\sqrt{3}}{2}$

Area of trapezium $QRVU = \frac{1}{4} \times 7500$

$\therefore \frac{1}{2} \times h \times (QR + UV) = \frac{1}{4} \times 7500$

$h = \frac{3750}{125 + \frac{\sqrt{3}}{2} \times 125} = \frac{60}{2 + \sqrt{3}} = 60(2 - \sqrt{3}) \approx 16.1$



QNo:- 70 ,Correct Answer:- 55

Explanation:-

On the day in question, the husband drove his car for 10 minutes less than the usual time. i.e. for 5 minutes less on forward journey and 5 minutes on the return journey.

If he had driven the car for 5 more minutes on the forward journey, he would have reached the station at 6 pm.

Hence when he met his wife the time was 5.55. So, she left the station at 5 pm and met her husband at 5.55 pm i.e. she walked for 55 minutes.

QNo:- 71 ,Correct Answer:- -20,000

Explanation:-

Suppose, Ram draws a 1, then let Shyam draw a 101 in the first draw, so that $m_1 = -100$, Ram draws a 2 in the third draw, Shyam draws a 102, then $m_3 = -100$, $m_5 = -100, \dots$ and then Ram draws a 101 in the second draw and Shyam draws a 1, $m_2 = 100, \dots$

Adding and subtracting, we get the minimum value as -20000 .

QNo:- 72 ,Correct Answer:- D

Explanation:-

Here, $n_1 = 65$, means Ram – 1 and Shyam – 64,
 $R - 2$ and $S - 63$,... There are 64 such combinations.
 Similarly, $n_1 = 337$ has 64 such combinations, viz.
 $R - 200$ and $S - 137$, $R - 199$ and $S - 138$, ...,
 $R - 137$ and $S - 200$.
 So, the answer is none of these.

QNo:- 73 ,Correct Answer:- 4

Explanation:-

Let us suppose all the machines are making tablets of the same weight 4 gms each.
 Then, the total weight should be $4(1 + 2 + 3 + \dots + 10) = 220$ gms since 1 tablet from the first machine, 2 tablets from the second machine... and ten tablets from the tenth machine are picked [on the supposition that all the tablets are of the same weight]. But the total weight is given to be 224 gms since one machine produces tablets of weight 5 gms each. The difference is $224 - 220 = 4$ gms.
 This means there are 4 tablets of weight 5 gms each among all the tablets picked.
 Therefore, the number of machine is 4, which is producing tablets of weight 5 gms each.

QNo:- 74 ,Correct Answer:- 26800

Explanation:-

The lowest course of brick is 18" wide i.e., 2 bricks placed lengthwise (horizontally – 6" x 2 = 12" with 150% increase). The second course 13½ wide, i.e., 3 bricks placed widthwise (horizontally – 3" x 3 = 9" with 150% increase). For all the remaining courses 9" wide, 1 brick is placed lengthwise (horizontally – 6" x 1 = 6" with 150% increase).

For the lowest course, bricks used will be = $\frac{\text{Length of the wall}}{\text{Length of 1 brick}} = \frac{100 \times 3 \times 12}{3 \times 150\%} \times 2$ bricks in the layer = 1600.

For the second course, bricks used will be = $\frac{100 \times 3 \times 12}{6 \times 150\%} \times 3$ bricks in the layer = 1200.

For all the remaining courses, bricks used in each layer will be = $\frac{100 \times 3 \times 12}{3 \times 150\%} \times 1$ brick in the layer = 800.

Since the height of the wall is 8 ft. = $8 \times 12" = 96"$, out of which 3" each (2" with 150% increase) are covered in the bottom 2 courses. Thus, the remaining height that will be 9 inches wide = $90"$ and thus requires $90"/3" = 30$ courses.

Therefore, total bricks required = $1600 + 1200 + 30 \times 800 = 26800$.

QNo:- 75 ,Correct Answer:- D

Explanation:-

First tap brings out $1/8^{\text{th}}$ of a litre in every 4 min, while the second tap brings out $1/4^{\text{th}}$ of a litre in every 6 min.
 So, till 12 o'clock, $1/8 + 1/4 = 3/8^{\text{th}}$ of a litre is drawn out. So, now the quantity of beer left = $37 - 3/8 = 36.625$ litres
 Now, Total quantity taken out from both taps between 12 o'clock & 8:10 pm will be $(1/8) \times 122.5 + (1/4) \times 81.6 = 15.3125 + 20.4 = 35.7125$ litres. Out of the remaining 36.625 litres, 35.7125 litres of beer is taken out.
 So, Quantity left in the barrel will be $36.625 - 35.7125 = 0.91$ litre = $11/12$ litres.

QNo:- 76 ,Correct Answer:- 4

Explanation:-

Shaina won = 2 races, let total races be n .

So as per condition

$$2x + (n-2)y = 35 \text{ ----- (1)}$$

$$(n-2)x - x + 2y = 42 \text{ -----(2)}$$

Adding $n(x+y) = 77$, n, x, y being +ve integer

n must be factor of 77 i.e., $n = 7, 11, 77$ $n > 2$

on subtracting (1) and (2) so $(n-4)(x-y) = 7$, $n-4$ should be factor of 7

$$n - 4 = 7,$$

$$\hat{n} = 11 \text{ and } x + y = 7$$

$$x - y = 1$$

$$x = 4, \text{ \& } y = 3$$

QNo:- 77 ,Correct Answer:- 2

Explanation:-

Let x be the height of the post, and y the distance of the man from the post originally. Let AB be the post, ab the original position of the man & $a'b'$ the position to which he moves. Let bc be the length of the shadow in the first case and $b'C'$ be the length of the shadow in the second case. Then $ab = 5$ ft, $bc = 8$ ft., $a'b' = 5$ ft., $bb' = 3$ ft, and $b'C' = 11$ ft.

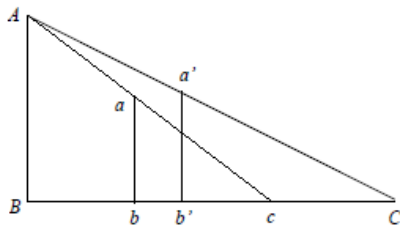
Then $AB = x$ ft, $Bb = y$ ft., and $Bc = Bb + bc$

$$= y + 8\text{ft.}, \text{ and } BC = y + 3 + 11 \text{ ft. Now, } \frac{AB}{Bc} = \frac{ab}{bc} \text{ and } \frac{AB}{BC} = \frac{a'b'}{b'C'} \therefore \frac{x}{y+8} = \frac{5}{8} \text{ and } \frac{x}{y+3+11} = \frac{5}{11} \text{ or}$$

$$8x - 5y = 40 \text{.....(i) and } 11x - 5y = 70 \text{.....(ii)}$$

Subtracting (i) from (ii), we have $3x = 30$;

$\therefore x = 10$ ft. Hence $y = 8$ ft. From the values of x and y , we get the answer, i.e. 2 ft.



QNo:- 78 ,Correct Answer:- 7

Explanation:-

Number of students getting 4 can only be 10.

Number of students getting four > numbers of students getting three > number of students getting 5

Total students = 30. Total marks = 93.

Subtracting 10 students having 4 marks, remaining students = 20

And marks left = $93 - 40 = 53$.

Now, there is to make a unique combination of marks and students as given below:

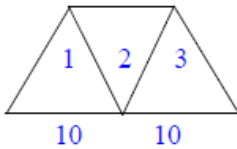
Marks	Students	Total Marks
2	11	22
3	7	21
5	2	10
Total	20	53

\therefore There are 7 students having 3 marks.

QNo:- 79 ,Correct Answer:- B

Explanation:-

The hexagonal bay will look as shown below.



It can be seen to be made up of 3 equilateral triangles.

Area of one triangle is $\sqrt{3}/4 \times 10^2$

So area of bay = $3 \times \sqrt{3}/4 \times 10^2$

= 129.9 sq ft

QNo:- 80 ,Correct Answer:- 44

Explanation:-

This is a case of derangement. In combinatorial mathematics, a derangement is a permutation of the elements of a set such that none of the elements appear in their original position. The derangement formula is $n!(1/2! - 1/3! + \dots)$ Using it here we get the answer as 44.

Alternate solution: The total number of ways of arranging the 5 digits is $5! = 120$. We are not interested in arrangements where 1 or more of the digits occupy the corresponding place, i.e., we are not interested in 5C, 3C2W, 2C3W or 1C4W. All 5 digits occupying the correct corresponding places, i.e., 5C, can happen in only 1 way. In case of 3C2W, the 3 correct cases can be chosen in ${}^5C_3 = 10$ ways and the 2 wrong digits can be arranged in 1 way. So, there are 10 possibilities for 3C2W. In case of 2C3W, the 2 correct digits can be chosen in ${}^5C_2 = 10$ ways and the 3 wrong digits can be arranged in 2 ways. So, there are $10 \times 2 = 20$ possibilities for 2C3W. In case of 1C4W, the correct digit can be chosen in 5 ways and the 4 wrong digits can be arranged in 9 ways. So, there are $5 \times 9 = 45$ possibilities for 1C4W. Thus, the number of ways in which none of the digits occupy their corresponding positions is $120 - 1 - 10 - 20 - 45 = 44$.

QNo:- 81 ,Correct Answer:- 20

Explanation:-

Let a, b, c be the sides then $a < b < c$ as the triangles are scalene. Also $c = 11$, hence, by triangle inequality $7 \leq b \leq 10$ and $c - b < a < b$. Thus, as b decreases by 1, the range of a decreases by 2. For $b = 10$, we have $2 \leq a \leq 9$. Hence, the number of triangles = $8 + 6 + 4 + 2 = 20$.

Following triangles are possible.

(11, 7, 5)	(11, 8, 5)	(11, 10, 4)	(11, 10, 6)
(11, 8, 4)	(11, 9, 4)	(11, 8, 7)	(11, 10, 7)
(11, 9, 3)	(11, 10, 3)	(11, 9, 6)	(11, 9, 8)
(11, 10, 2)	(11, 8, 6)	(11, 10, 5)	(11, 10, 8)
(11, 7, 6)	(11, 9, 5)	(11, 9, 7)	(11, 10, 9)

QNo:- 82 ,Correct Answer:- 15

Explanation:-

He has to have at least 15 of each. So that takes care of 45 numbers. Now the remaining 5 can be split into two different increasing orders as follows: 0, 2, 3 that means 15 apples, 17 beetroot, 18 ash gourd

Or 0, 1, 4 that means 15 apples, 16 beetroot, 19 ashgourd. In both cases, the number of apples is 15.

QNo:- 83 ,Correct Answer:- 189

Explanation:-

If Satinder bought 17 beetroot, then he must have bought 15 apples and 18 ashgourd.

So, his total cost is $17 \times 2 + 15 \times 3 + 18 \times 4 = 151$.

So, selling price was $151 + 38 = \text{Rs. } 189$.

QNo:- 84 ,Correct Answer:- 3

Explanation:-

Now we can also have a case of 16 apples, 17 ashgourd and 17 beetroot.

We now will expect the basket price to reduce. So, his new price will be $16 \times 3 + 17 \times 2 + 17 \times 4 = 150$.

Also in the last case, his cost price is $15 \times 3 + 16 \times 2 + 19 \times 4 = 153$.

If Satinder bought 17 beetroot, then he must have bought 15 apples and 18 ashgourd.

So, his total cost is $17 \times 2 + 15 \times 3 + 18 \times 4 = 151$.

He saves Rs.3 in the first case and Rs.1 in the second case. The maximum saving is Rs.3.

QNo:- 85 ,Correct Answer:- D

Explanation:-

Total number of 2 digit numbers are = 90

Digits which can create confusion when read upside down = 0, 1, 8, 6, 9.

0 will not create confusion because we are talking about 2 digit numbers.

So, numbers made by 1, 8, 6, 9 are 11, 18, 16, 19, 81, 86, 88, 89, 61, 68, 66, 69, 91, 98, 96, 99. (i.e. in total 16.)

Out of these 11, 96, 69, 88 will not create any confusion. So, $16 - 4 = 12$ numbers can create confusion.

So, reqd. number of numbers = $90 - 12 = 78$

QNo:- 86 ,Correct Answer:- B

Explanation:-

The difference in arrival times of 9 minutes is because 45 km is travelled once at normal speed and once at $5/6^{\text{th}}$ of normal speed.

Since the ratio of speeds is 5:6, the ratio of times will be 6:5. This difference of 1 unit amounts to 9 minutes. So, the actual time of 5 units amounts to $5 \times 9 = 45$ minutes. Since the time taken to travel 45 km at normal speed is 45 minutes, the normal speed of the car is 60 kmph. The distance travelled by the car from 3:00 p.m. to 4:15 p.m. at 60 kmph is 75 km. The distance travelled by the car from 4:15 p.m. to 9:57 p.m. at 50 kmph is 285 km. Thus the total distance is $75 + 285 = 360$ km.

QNo:- 87 ,Correct Answer:- B

Explanation:-

Without losing generality we presume $a \leq b \leq c$ and all being the integers

$$\frac{1}{a} \geq \frac{1}{b} \geq \frac{1}{c}$$

$$\frac{1}{a} + \frac{1}{b} + \frac{1}{c} \leq \frac{1}{a} + \frac{1}{a} + \frac{1}{a}$$

$$\frac{1}{a} + \frac{1}{b} + \frac{1}{c} \leq \frac{3}{a}$$

$$\frac{1}{4} \leq \frac{1}{a} \Rightarrow 4 \geq a \Rightarrow a \leq 4$$

Let $a = 4$ then $\frac{1}{b} + \frac{1}{c} = \frac{3}{4} - \frac{1}{4} = \frac{1}{2}$

again $b \leq c$

$$\frac{1}{b} \geq \frac{1}{c}$$

$$\frac{1}{b} + \frac{1}{c} \leq \frac{2}{b}$$

$$\frac{1}{2} \leq \frac{2}{b}$$

$$4 \geq b \Rightarrow b \leq 4$$

Let $b = 4$ then $\frac{1}{4} + \frac{1}{c} = \frac{1}{2} \Rightarrow c = 4$

Now taking $a = 3$ then $\frac{1}{b} + \frac{1}{c} = \frac{3}{4} - \frac{1}{3} = \frac{5}{12}$

$$\frac{5}{12} \leq \frac{2}{b} \Rightarrow b \leq 4$$

Let $b = 4$, then $\frac{1}{c} = \frac{5}{12} - \frac{1}{4} = \frac{1}{6}$. Hence $c = 6$.

If $b = 3$ {we can take $b = 3$ only as b cannot be less than a }

$$\frac{1}{c} = \frac{5}{12} - \frac{1}{3} = \frac{1}{12} \Rightarrow c = 12$$

Similarly we can form the following triplets

(4,4,4) (3,3,12) (3,4,6) (2,5,20) (2,6,12) (2,8,8)

Now removing the condition of start that is for any a, b, c then these triplets can be arranged in different ways.

In total = $1 + 3 + 6 + 6 + 6 + 3 = 25$ ordered triplets will be possible.

QNo:- 88 ,Correct Answer:- D

Explanation:-

Sum of five consecutive numbers is perfect cube

But sum of five consecutive numbers = 5 (Middle term that is the third number) = $5m$ (third number is = m)

$5m = a$ cube

Sum of second, third, fourth number is = 3 (third number) = $3m$

$$\Rightarrow 3m = a \text{ perfect square}$$

And above all m has to be minimum so it is possible only when $m = 3^3 \cdot 5^2 = 675$.

QNo:- 89 ,Correct Answer:- 140

Explanation:-

Suppose $\angle ABD = x^\circ$, $\angle DBC = 2x^\circ$, $\angle ACD = y^\circ$ and $\angle DCB = 2y^\circ$. Now, in $\triangle ABC$, $3x + 3y = 60^\circ \Rightarrow (x + y) = 20^\circ$.

In $\triangle DBC$, $\angle DBC + \angle DCB = 2(x + y) = 40^\circ$. Thus, $\angle BDC = 140^\circ$.

QNo:- 90 ,Correct Answer:- B

Explanation:-

3-digit multiples of 3 range from $3 \times 34 = 102$ to $3 \times 333 = 999$. So, there are $333 - 33 = 300$ such multiples and their sum is

$(300/2)(102 + 999) = 165150$. 3-digit multiples of 5 range from $5 \times 20 = 100$ to $5 \times 199 = 995$. So, there are $199 - 19 = 180$ such multiples and their sum is $(180/2)(100 + 995) = 98550$. Multiples of 15 will be common to both sets. 3-digit multiples of 15 range from $15 \times 7 = 105$ to $15 \times 66 = 990$. So, there are $66 - 6 = 60$ such multiples and their sum is $(60/2)(105 + 990) = 32850$. Thus the sum of all 3-digit multiples of 3 or 5 is $165150 + 98550 - 32850 = 230,850$.

QNo:- 91 ,Correct Answer:- C

Explanation:-

Option 1. The 2 litres given to Shamu contain milk and water in the ratio 9:1, i.e., 1.8 litres of milk and 0.2 litres of water. The remaining 18 litres contains 16.2 litres of milk and 1.8 litres of water. After adding tap water, the ratio of milk to water becomes

9:10. \Rightarrow the quantity of tap water is $16.2 \times 10/9 = 18$ litres. Since the mixture already has 18 litres, the total quantity now becomes

36 litres. The total revenue is $36 \times 50 + 2 \times 50$ (already sold) = 1900. The total cost is $900 + (2 \times 15) = \text{Rs. } 930$. Thus his profit is

$1900 - 930 = \text{Rs. } 970 \Rightarrow (970/930) \times 100 = 104\%$.

QNo:- 92 ,Correct Answer:- C

Explanation:-

Suppose the total work is 120 units. A, B, C and D can respectively complete 12, 6, 4 and 3 units of work each day. Distinct groups of 3 for 4 days is the same as all 4 working together for 3 days. So, the amount of work completed in 4 days is $3(12 + 6 + 4 + 3) = 75$ units. Over the next 3 days, AB, BC and CD will complete 18, 10 and 7 units of work respectively. So, the amount of work completed in 7 days is $75 + 18 + 10 + 7 = 110$ units. The group DA has to work on the next day. Since it can complete 15 units of work in 1 day, it will need $2/3$ days to complete the remaining 10 units of work. Thus the work will be completed in $7\frac{2}{3}$ days.

QNo:- 93 ,Correct Answer:- 800

Explanation:-

Using the formula : $\text{Error}/(1000-\text{Error}) = \% \text{ profit}$;

Here $\% \text{ profit} = 25\% = E/(1000-E)$

$E=200\text{gm}$; He uses $1000-200 = 800\text{gms}$.

QNo:- 94 ,Correct Answer:- B

Explanation:-

$$R = \frac{7500 \times 100}{25000 \times 3} = 10\%$$

$$A = 25000 \left(1 + \frac{10}{100} \right)^3 = 33275; \text{ So CI} = 33275 - 25000 = \text{Rs. } 8275$$

QNo:- 95 ,Correct Answer:- A

Explanation:-

Option 1.

Since $(x - 1)$ and $(x + 1)$ are factors of $x^3 + ax^2 + bx + c$, substituting $x = 1$ and $x = -1$, we get $a + b + c = -1$ and $a - b + c = 1$.

Adding these equations, we get $a + c = 0$

So $a = -c$.

Substituting $a + c = 0$, we get $b = -1$.

When divided by $(x - 2)$, the expression leaves a remainder of 12.

So, substituting $x = 2$, we get $8 + 4a + 2b + c = 12$

Hence $3a + 2b = 4$ (since $c = -a$)

$$3a - 2 = 4$$

$$3a = 6$$

$$a = 2$$

$$c = -2$$

QNo:- 96 ,Correct Answer:- B

Explanation:-

Suppose the number of females at the party is F and the number of males initially is M , so that $F : M = 3 : 2$. We know that finally 42% of the people are males and 58% are females. After 20 more males join the party, the number of females is $F = 0.58(F + M + 20) = 0.58(F + (2/3)F + 20)$, which gives $F = 348$ and $M = 232$. Initially the number of people who like to dance is $0.4(232 + 348) = 232$. Thus, finally $232 + 20 = 252$ people at the party like to dance.

QNo:- 97 ,Correct Answer:- B

Explanation:-

Suppose we take 5 litres from the first vessel and 15 litres from the second vessel.

The 5 litres taken from the first vessel will contain 2 litres of water and 3 litres of milk.

The 15 litres taken from the second vessel will contain 9 litres of water and 6 litres of milk.

So the final mixture will contain $(2 + 9) = 11$ litres of water and $(3 + 6) = 9$ litres of milk.

Thus the required ratio milk to water will be $9 : 11$.

QNo:- 98 ,Correct Answer:- A

Explanation:-

$$\left| \frac{10-x}{3} \right| < 2 \text{ can be rewritten as } |10-x| < 6,$$

which means $-6 < 10 - x < 6$ or $-16 < x < -4$. Multiplying by -1 , we get $4 < x < 16$.

QNo:- 99 ,Correct Answer:- D

Explanation:-

Let the weights of Madhu, Shilpa and Mehr be M_1 , S and M_2 respectively. Also let the total weight of the rest be k kgs. Then

$$M_1 + S + M_2 + k = 47.9 \times 10 = 479$$

$$\text{Also } S + M_2 + k = 46 \times 9 = 414$$

Subtracting the two equations, we get

$$\text{This gives } M_1 = 65 \text{ kgs.}$$

The weight of Madhu is 65 kg.

QNo:- 100 ,Correct Answer:- B

Explanation:-

Let the present age of Rajesh and his father be R and F respectively.

$2n$ years ago.

$$(F - 2n) = 4(R - 2n)$$

$$\Rightarrow F = 4R - 6n \dots\dots (1)$$

n years ago,

$$(F - n) = 3(R - n)$$

$$\Rightarrow F = 3R - 2n \dots\dots (2)$$

$$(1) = (2)$$

$$\Rightarrow 4R - 6n = 3R - 2n$$

$$\Rightarrow R = 4n$$

$$\Rightarrow F = 3(4n) - 2n = 10n$$

$$n \text{ years later, total age} = (R + n) + (F + n) = 11n + 5n = 16n = 80 \text{ (given)} \Rightarrow n = 5$$

$$\text{Difference in ages} = 10n - 4n = 6n = 30$$
