Directions of Test

Test Name	2016 Bull CAT 19	Total Questions	100	Total Time	180 Mins

Section Name	No. of Questions	Time limit	Marks per Question	Negative Marking
Verbal Ability	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 Ability

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

Question No. : 1

After my farm was destroyed, it was clear to me that I had to adapt. I began to re-imagine my occupation and oyster farm. I began experimenting new designs. I lifted my farm off the sea bottom to avoid the impact of storm surges created by hurricanes and started to grow new mixes of restorative species. Let's dive in and take a look. Imagine a vertical underwater garden with hurricane-proof anchors on the edges connected by floating horizontal ropes across the surface. From these lines kelp and Gracilaria and other kinds of seaweeds grow vertically downward next to scallops in hanging nets that look like Japanese lanterns and mussels held in suspension in mesh socks. Staked below the vertical garden are oysters in cages and then clams buried in the sea floor. Our underwater farms have a low aesthetic impact. Because the farm is vertical, it has a small footprint. My farm used to be 100 acres; now it's down to 20 acres, but it produces much more food than before.

As ocean farmers, we reject aquaculture's obsession with monoculture, an obsession similar to that of modern land farming. It's a sea-basket approach: We grow two types of seaweeds, four kinds of shellfish, and we harvest salt. But with over 10,000 edible plants in the ocean, we've barely scratched the surface. We intend to de-sushify seaweed and invent a new native cuisine, not around our industrial palate of salmon and tuna but around the thousands of undiscovered ocean vegetables that are right outside our backdoor.

Native seaweeds contain more vitamin C than orange juice, more calcium than milk, and more protein than soybeans. It might surprise those of you on the hunt for Omega-3s to learn that many fish do not create these heart-healthy nutrients by themselves —they consume them. By eating the plants fish eat, we get the same benefits while reducing pressure on fish stocks. So it's time that we eat like fish. This is zero-input food that requires no fresh water, no fertilizer, no feed, no arid land. It is hands down the most sustainable food on the planet. The question is, will it be delicious food or will it be like being force-fed cod liver oil? As farmers, it's our job to grow this new cuisine, and for chefs it's their job to make it tasty.

In 1979, Jacques Cousteau, the father of ocean conservation, wrote: "We must plant the sea and herd its animals using the ocean as farmers instead of hunters. That is what civilization is all about—farming replacing hunting." This dream of Cousteau's and of Green Wave's is frightening to some environmentalists. The instinct of environmentalists is to do everything they can to protect the oceans from any and all forms of economic development. They shield themselves with a "politics of no." I'm sympathetic to these fears, especially given the history of industrial aquaculture in the 1980s; yet in the era of climate change, it's an illusion for environmentalists to think they can save our seas by relying on a conservation strategy alone while continuing to ask the oceans to feed our hunger for wild seafood.

Excerpted from a post in Medium by Bren Smith

Aquaculture : Ocean Farming

Which of the options below represent the same relationship as above?

A) Industrial Agriculture : Sustenance Farming B) Industrial Agriculture : Organic Farming C) Hunting : Farming
D) Nature : Nurture

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Question No. : 2

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Excerpted from a post in Medium by Bren Smith

The author has been quoted making this statement: We're trying to break down the seawalls that separate our land-based and ocean-based food systems.

Which of the following measures is an instance to support the statement above?

A) Run-offs of fertilizers enter the seas through waterways; kelp at the ocean farms captures the nitrogen. Some of the kelp is converted to fertilizer for use in farms.
B) Seaweeds could be a powerful source of zero-input biofuel; feasibility studies suggest we might produce 2,000 gallons of ethanol per acre.
C) As the price of fertilizer, water, and feed goes up, zero-input food is going to be the most affordable food on the planet
D) Ocean greens such as kelp are not small boutique crops. We can grow incredible amounts of food in small areas: 25 tons of greens and 250,000 shellfish per acre in five months.

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Excerpted from a post in Medium by Bren Smith

What was the author's vocation immediately before he started his ocean farm?

A) Deep sea trawler operator B) Aquaculture farm owner C) University Professor D) Environmentalist

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

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Extending further on the idea of the passage, which of the following measures, if taken, can make ocean farming more sustainable? (Tick all that apply)

A. Hatcheries close by so that farmers can access seed just-in-time.
B. Farmers don't own their patch of ocean; they own only the right to grow shellfish and seaweeds there.

C. Leases are up for review every five years.
D. Designing the farms to require high capital costs and minimal labor skills.

A) A & B B) B & D C) B & C D) A & D

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

Question No. : 5

So far we've been looking to this new piece of mechanical technology or that great next generation robot as part of a lineup to ensure our species' safe passage in space. Wonderful as they are, I believe the time has come for us to complement these bulky electronic giants with what nature has already invented: the microbe, a single-celled organism that is itself a self-generating, self-replenishing, living machine. It requires fairly little to maintain, offers much flexibility in design and only asks to be carried in a single plastic tube.

The field of study that has enabled us to utilize the capabilities of the microbe is known as synthetic biology. It comes from molecular biology, which has given us antibiotics, vaccines and better ways to observe the physiological nuances of the human body. Using the tools of synthetic biology, we can now edit the genes of nearly any organism, microscopic or not, with incredible speed and fidelity. Given the limitations of our man-made machines, synthetic biology will be a means for us to engineer not only our food, our fuel and our environment, but also ourselves to compensate for our physical inadequacies and to ensure our survival in space.

To give you an example of how we can use synthetic biology for space exploration, let us go to the Mars environment. The Martian soil composition is similar to that of Hawaiian volcanic ash, with trace amounts of organic material. Let's say, hypothetically, what if martian soil could actually support plant growth without using Earth-derived nutrients? The first question we should probably ask is, how would we make our plants cold-tolerant? Because, on average, the temperature on Mars is a very uninviting negative 60 degrees centigrade. The next question we should ask is, how do we make our plants drought-tolerant? By borrowing genes for anti-freeze protein from fish and genes for drought tolerance from other plants like rice and then stitching them into the plants that need them, we now have plants that can tolerate most droughts and freezes. They're known on Earth as genetically modified organisms, and we rely on them to feed all the mouths of human civilization.

So why would we want to change the genetic makeup of plants for space? Well, to not do so would mean needing to engineer endless acres of land on an entirely new planet by releasing trillions of gallons of atmospheric gasses and then constructing a giant glass dome to contain it all. It's an unrealistic engineering enterprise that quickly becomes a high-cost cargo transport mission. One of the best ways to ensure that we will have the food supplies and the air that we need is to bring with us organisms that have been engineered to adapt to new and harsh environments. In essence, using engineered organisms to help us terraform a planet both in the short and long term. These organisms can then also be engineered to make medicine or fuel.

Now moving on to homo sapiens, a species that is still continuing to evolve. Thousands of years of human evolution has not only given us humans like Tibetans, who can thrive in low-oxygen conditions, but also Argentinians, who can ingest and metabolize arsenic, the chemical element that can kill the average human being. Every day, the human body evolves by accidental mutations that equally accidentally allow certain humans to persevere in dismal situations.

But, and this is a big but, such evolution requires two things that we may not always have, or be able to afford, and they are death and time. In our species' struggle to find our place in the universe, we may not always have the time necessary for the natural evolution of extra functions for survival on non-Earth planets. We're living in what E.O. Wilson has termed the age of gene circumvention, during which we remedy our genetic defects like cystic fibrosis or muscular dystrophy with temporary external supplements. But with every passing day, we approach the age of volitional evolution, a time during which we as a species will have the capacity to decide for ourselves our own genetic destiny. Augmenting the human body with new abilities is no longer a question of how, but of when.

Excerpted from TED talk by Lisa Nip

What is the relation between gene circumvention and volitional evolution?

A) They are both synonyms B) One is cure, the other is prevention C) The difference is that of degree
D) One is artificial, the other is natural

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

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Excerpted from TED talk by Lisa Nip

What is the main question that this passage is trying to answer?

A) How to undertake mankind's journey to find a new home under a new sun?
B) What can we do to reinvigorate the ethos for space travel?
C) What all do we need to be ready for before we start work on modifying the human genome?
D) Where all can we use the upcoming science of synthetic biology?

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

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Excerpted from TED talk by Lisa Nip

Research on which of the following applications of synthetic biology would be relevant to human life on Mars?

A) Structural properties of the DNA as the order of nucleotides, recombinational behaviors, self-assembly due to Watson-Crick base paring and storage of free energy have been used for different aspects of computational systems.
B) Use of characterized invasin from Yersinia pseudotuburculosis as an output module that enables Escherichia coli to invade cancer-derived cells.
C) Artemisia annua and yeast cells were engineered to express the enzyme amorphadiene synthase and a cytochrome P450 monooxygenase to get the active drug component to treat malaria.
D) Deinococcus radiodurans is known to be able to withstand cold, dehydration, vacuum, acid, and, most notably, radiation.

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Excerpted from TED talk by Lisa Nip

Which of the following is the first sentence of the paragraph that follows the last paragraph of the passage?

A) Among the plethora of life here on Earth, there's a subset of organisms known as extremophiles, or lovers of extreme living conditions.
B) Our true final frontier is the line we must cross in deciding what we can and should make of our species' improbable intelligence.
C) Using synthetic biology to change the genetic makeup of any living organisms, especially our own, is not without its moral and ethical quandaries.
D) I pose these questions not to engender the fear of science but to bring to light the many possibilities that science has afforded and continues to afford us.

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

Question No. : 9

The extent to which modern technology has taken over the work of human hands may be illustrated as follows. We may ask how much of 'total social time' - that is to say, the time all of us have together, twenty-four hours a day each - is actually engaged in

real production, Rather less than one-half of the total population of this country is, as they say, gainfully occupied, and about one-third of these are actual producers in agriculture, mining, construction, and industry. I do mean actual producers, not people who tell other people what to do, or account for the past, or plan for the future, or distribute what other people have produced. In other words, rather less than one-sixth of the total population is engaged in actual production; on average, each of them supports five others beside himself, of which two are gainfully employed on things other than real production and three are not gainfully employed. Now, a fully employed person, allowing for holidays, sickness, and other absence, spends about one-fifth of his total time on his job. It follows that the proportion of 'total social time' spent on actual production - in the narrow sense in which I am using the term - is, roughly, one-fifth of one-third of one-half, i.e. 3.3 per cent. The other 96 per cent of 'total social time' is spent in other ways, including sleeping, eating, watching television, doing jobs that are not directly productive, or just killing time more or less humanely.

Although this bit of figuring work need not be taken too literally, it quite adequately serves to show what technology has enabled us to do: namely, to reduce the amount of time actually spent on production in its most elementary sense to such a tiny percentage of total social time that it pales into insignificance, that it carries no real weight, let alone prestige. When you look at industrial society in this way, you cannot be surprised to find that prestige is carried by those who help fill the other 96 per cent of total social time, primarily the entertainers but also the executors of Parkinson's Law. In fact, one might put the following proposition to students of sociology: 'The prestige carried by people in modern industrial society varies in inverse proportion to their closeness to actual production.' There is a further reason for this. The process of confining productive time to 3.3 per cent of total social time has had the inevitable effect of taking all normal human pleasure and satisfaction out of the time spent on this work. Virtually all real production has been turned into an inhuman chore which does not enrich a man but empties him.

We may say, therefore, that modern technology has deprived man of the kind of work that he enjoys most, creative, useful work with hands and brains, and given him plenty of work of a fragmented kind, most of which he does not enjoy at all. It has multiplied the number of people who are exceedingly busy doing kinds of work which, if it is productive at all, is so only in an indirect or 'roundabout' way, and much of which would not be necessary at all if technology were rather less modern. All this confirms our suspicion that modern technology, the way it has developed, is developing, and promises further to develop, is showing an increasingly inhuman face, and that we might do well to take stock and reconsider our goals.

Excerpted from pages 445-451 of 'Small is Beautiful' by EF Schumacher

What can be inferred about Parkinson's law referenced to in the second paragraph?

A) It correlates an individual's social status with the type of job she does.
B) It describes how we create work to fill available time. C) It is a law which sets about defining individual productivity.
D) It measures the impact that technology has on creating leisure time.

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

Question No. : 10

The extent to which modern technology has taken over the work of human hands may be illustrated as follows. We may ask how much of 'total social time' - that is to say, the time all of us have together, twenty-four hours a day each - is actually engaged in real production, Rather less than one-half of the total population of this country is, as they say, gainfully occupied, and about one-third of these are actual producers in agriculture, mining, construction, and industry. I do mean actual producers, not people who tell other people what to do, or account for the past, or plan for the future, or distribute what other people have produced. In other words, rather less than one-sixth of the total population is engaged in actual production; on average, each of them supports five others beside himself, of which two are gainfully employed on things other than real production and three are not gainfully employed. Now, a fully employed person, allowing for holidays, sickness, and other absence, spends about one-fifth of his total time on his job. It follows that the proportion of 'total social time' spent on actual production - in the narrow sense in which I am using the term - is, roughly, one-fifth of one-third of one-half, i.e. 3.3 per cent. The other 96 per cent of 'total social time' is spent in other ways, including sleeping, eating, watching television, doing jobs that are not directly productive, or just killing time more or less humanely.

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In the context of the passage, fill in the blanks.

'From the factory,' it has been said, _____ goes out improved, whereas men there are _____'?

Blank 1	Blank 2
A. the entrepreneur	D. productively employed
B. dead matter	E. trained and reskilled
C. a worker	F. corrupted and degraded

A) B & F B) A & D C) C & F D) B & E

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

Question No. : 11

The extent to which modern technology has taken over the work of human hands may be illustrated as follows. We may ask how much of 'total social time' - that is to say, the time all of us have together, twenty-four hours a day each - is actually engaged in real production, Rather less than one-half of the total population of this country is, as they say, gainfully occupied, and about one-third of these are actual producers in agriculture, mining, construction, and industry. I do mean actual producers, not people who tell other people what to do, or account for the past, or plan for the future, or distribute what other people have produced. In other words, rather less than one-sixth of the total population is engaged in actual production; on average, each of them supports five others beside himself, of which two are gainfully employed on things other than real production and three are not gainfully employed. Now, a fully employed person, allowing for holidays, sickness, and other absence, spends about one-fifth of his total time on his job. It follows that the proportion of 'total social time' spent on actual production - in the narrow sense in which I am using the term - is, roughly, one-fifth of one-third of one-half, i.e. 3.3 per cent. The other 96 per cent of 'total social time' is spent in other ways, including sleeping, eating, watching television, doing jobs that are not directly productive, or just killing time more or less humanely.

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Excerpted from pages 445-451 of 'Small is Beautiful' by EF Schumacher

What can be inferred about the kind of work that will lead to the most satisfaction?
Choose all that apply.

A. Work which involves experiments.
B. Work that requires application of mind.
C. Work that is non-routine
D. Work that is discontinuous

A) A, B & C B) A, C & D C) B & C D) A & D

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

Question No. : 12

The extent to which modern technology has taken over the work of human hands may be illustrated as follows. We may ask how much of 'total social time' - that is to say, the time all of us have together, twenty-four hours a day each - is actually engaged in real production, Rather less than one-half of the total population of this country is, as they say, gainfully occupied, and about one-third of these are actual producers in agriculture, mining, construction, and industry. I do mean actual producers, not people who tell other people what to do, or account for the past, or plan for the future, or distribute what other people have produced. In other words, rather less than one-sixth of the total population is engaged in actual production; on average, each of them supports five others beside himself, of which two are gainfully employed on things other than real production and three are not gainfully employed. Now, a fully employed person, allowing for holidays, sickness, and other absence, spends about one-fifth of his total time on his job. It follows that the proportion of 'total social time' spent on actual production - in the narrow sense in which I am using the term - is, roughly, one-fifth of one-third of one-half, i.e. 3.3 per cent. The other 96 per cent of 'total social time' is spent in other ways, including sleeping, eating, watching television, doing jobs that are not directly productive, or just killing time more or less humanely.

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Excerpted from pages 445-451 of 'Small is Beautiful' by EF Schumacher

Which of the following quotations would exemplify the message of the passage?

A) Confucius: 'Choose a job you love, and you will never have to work a day in your life.'
B) Karl Marx: 'The production of too many useful things results in too many useless people.'
C) Peter Drucker: 'The productivity of work is not the responsibility of the worker but of the manager.'
D) Arthur C Clarke: 'Any sufficiently advanced technology is indistinguishable from magic.'

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

Question No. : 13

Adultery has existed since marriage was invented, and so, too, the taboo against it. So how do we reconcile what is universally forbidden, yet universally practiced? Throughout history, men practically had a license to cheat with little consequence, and

supported by a host of biological and evolutionary theories that justified their need to roam, so the double standard is as old as adultery itself. When it comes to sex, the pressure for men is to boast and to exaggerate, but the pressure for women is to hide, minimize and deny, which isn't surprising when you consider that there are still nine countries where women can be killed for straying.

So it's never been easier to cheat, and it's never been more difficult to keep a secret. And never has infidelity exacted such a psychological toll. When marriage was an economic enterprise, infidelity threatened our economic security. But now that marriage is a romantic arrangement, infidelity threatens our emotional security.

Because of this romantic ideal, we are relying on our partner's fidelity with a unique fervor. But we also have never been more inclined to stray, and not because we have new desires today, but because we live in an era where we feel that we are entitled to pursue our desires, because this is the culture where I deserve to be happy. And if we used to divorce because we were unhappy, today we divorce because we could be happier. And if divorce carried all the shame, today, choosing to stay when you can leave is the new shame.

So if we can divorce, why do we still have affairs? Now, the typical assumption is that if someone cheats, either there's something wrong in your relationship or wrong with you. But millions of people can't all be pathological. The logic goes like this: If you have everything you need at home, then there is no need to go looking elsewhere, assuming that there is such a thing as a perfect marriage that will inoculate us against wanderlust. But what if passion has a finite shelf life? What if there are things that even a good relationship can never provide? If even happy people cheat, what is it about?

The vast majority of people that I actually work with are not at all chronic philanderers. They are often people who are deeply monogamous in their beliefs, and at least for their partner. But they find themselves in a conflict between their values and their behavior. They often are people who have actually been faithful for decades, but one day they cross a line that they never thought they would cross, and at the risk of losing everything. At the heart of an affair, you will often find a longing and a yearning for an emotional connection, for novelty, for freedom, for autonomy, for sexual intensity, a wish to recapture lost parts of ourselves or an attempt to bring back vitality in the face of loss and tragedy. And contrary to what you may think, affairs are way less about sex, and a lot more about desire: desire for attention, desire to feel special, desire to feel important.

So how do we heal from an affair? The fact is, the majority of couples who have experienced affairs, stay together. But some of them will merely survive, and others will actually be able to turn a crisis into an opportunity. I've noticed that a lot of couples, in the immediate aftermath of an affair, because of this new disorder that may actually lead to a new order, will have depths of conversations with honesty and openness that they haven't had in decades. And, partners who were sexually indifferent find themselves suddenly so lustfully voracious, they don't know where it's coming from.

Every affair will redefine a relationship, and every couple will determine what the legacy of the affair will be. Betrayal in a relationship comes in many forms. There are many ways that we betray our partner: with contempt, with neglect, with indifference, with violence. Sexual betrayal is only one way to hurt a partner. In other words, the victim of an affair is not always the victim of the marriage.

I look at affairs from a dual perspective: hurt and betrayal on one side, growth and self-discovery on the other -- what it did to you, and what it meant for me. And so when a couple comes to me in the aftermath of an affair that has been revealed, I will often tell them this: Today, most of us are going to have two or three relationships or marriages, and some of us are going to do it with the same person. Your first marriage is over. Would you like to create a second one together?

Excerpted from TED Talk by Esther Perel

What can be construed to be the original reason for men to impose the concept of 'fidelity' on a woman?

A) In order to know whose children these are, and who gets the cows when I die.
B) Monogamy used to be one person for life. Today, monogamy is one person at a time.
C) Because passion has a finite shelf life D) Since they always yearned for an emotional connection

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

Question No. : 14

Adultery has existed since marriage was invented, and so, too, the taboo against it. So how do we reconcile what is universally forbidden, yet universally practiced? Throughout history, men practically had a license to cheat with little consequence, and

supported by a host of biological and evolutionary theories that justified their need to roam, so the double standard is as old as adultery itself. When it comes to sex, the pressure for men is to boast and to exaggerate, but the pressure for women is to hide, minimize and deny, which isn't surprising when you consider that there are still nine countries where women can be killed for straying.

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So if we can divorce, why do we still have affairs? Now, the typical assumption is that if someone cheats, either there's something wrong in your relationship or wrong with you. But millions of people can't all be pathological. The logic goes like this: If you have everything you need at home, then there is no need to go looking elsewhere, assuming that there is such a thing as a perfect marriage that will inoculate us against wanderlust. But what if passion has a finite shelf life? What if there are things that even a good relationship can never provide? If even happy people cheat, what is it about?

The vast majority of people that I actually work with are not at all chronic philanderers. They are often people who are deeply monogamous in their beliefs, and at least for their partner. But they find themselves in a conflict between their values and their behavior. They often are people who have actually been faithful for decades, but one day they cross a line that they never thought they would cross, and at the risk of losing everything. At the heart of an affair, you will often find a longing and a yearning for an emotional connection, for novelty, for freedom, for autonomy, for sexual intensity, a wish to recapture lost parts of ourselves or an attempt to bring back vitality in the face of loss and tragedy. And contrary to what you may think, affairs are way less about sex, and a lot more about desire: desire for attention, desire to feel special, desire to feel important.

So how do we heal from an affair? The fact is, the majority of couples who have experienced affairs, stay together. But some of them will merely survive, and others will actually be able to turn a crisis into an opportunity. I've noticed that a lot of couples, in the immediate aftermath of an affair, because of this new disorder that may actually lead to a new order, will have depths of conversations with honesty and openness that they haven't had in decades. And, partners who were sexually indifferent find themselves suddenly so lustfully voracious, they don't know where it's coming from.

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Excerpted from TED Talk by Esther Perel

In today's world of serial relationships, which of the following represent reason(s) for affairs to be still seen as traumatic?

A. As they are attempts to bring back vitality in the face of loss and tragedy.
B. It shatters the concept of a romantic ideal of turning to one person for fulfilling a long list of needs – romance, friendship, confidant, intellectual.
C. It creates a sense of doubt – and violates the trust on which relationships are founded.
D. People find themselves in a conflict between their values and their behavior.

A) A & D B) B & C C) B & D D) Only C

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

Question No. : 15

Adultery has existed since marriage was invented, and so, too, the taboo against it. So how do we reconcile what is universally forbidden, yet universally practiced? Throughout history, men practically had a license to cheat with little consequence, and supported by a host of biological and evolutionary theories that justified their need to roam, so the double standard is as old as adultery itself. When it comes to sex, the pressure for men is to boast and to exaggerate, but the pressure for women is to hide, minimize and deny, which isn't surprising when you consider that there are still nine countries where women can be killed for straying.

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Excerpted from TED Talk by Esther Perel

When we seek the gaze of another, it isn't always our partner that we are turning away from, but the person that we have ourselves become.

The above sentence –

A) Is a philosophy that applies exclusively to same-gender relationships. B) Contradicts a point mentioned in the passage.
C) Is a new perspective on the reason people have affairs. D) Would not be relevant in this passage.

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

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Question No. : 16

Adultery has existed since marriage was invented, and so, too, the taboo against it. So how do we reconcile what is universally forbidden, yet universally practiced? Throughout history, men practically had a license to cheat with little consequence, and supported by a host of biological and evolutionary theories that justified their need to roam, so the double standard is as old as adultery itself. When it comes to sex, the pressure for men is to boast and to exaggerate, but the pressure for women is to hide, minimize and deny, which isn't surprising when you consider that there are still nine countries where women can be killed for straying.

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Excerpted from TED Talk by Esther Perel

Based on your reading of the passage, what can be construed to be a relationship between the death of a loved one and an affair?

A) You would not call an affair as something that happens after your spouse passes away.
B) Affairs bring back the life in a relationship – so in a sense they are anti-death.
C) Some affairs are an attempt to beat back deadness, in an antidote to death.
D) Affairs make you ask a lot of questions about what you all you want to do before you die.

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

Question No. : 17

It all started with learning about learning. I remember clearly my early teaching experience in college. I knew my subject, and I had read books on pedagogy, psychology, and development. I was sitting on top of the world — so "knowledgeable,". . . Reality came in small doses. First, I found out that all those eager, happy-looking faces sitting before me were masking massive boredom and indifference. Then I found out that they weren't getting most of what I was saying. "Here's an important point," I would intone with majestic emphasis, "and it provides an insight the textbooks don't give." Alas, to no avail. When the exam papers came back, the textbook version, memorized carefully, was all I ever saw.

Then I discovered the awful truth, that in fact we really don't know how people learn at all, whether they are or are not interested in what they are learning. Sometimes, I feel the schools around us are the world's greatest example of the legend of the emperor's new clothes.

In our school, the kids use other kids, books, instruments, and adults as they see fit. Their chief tool is their curiosity, which drives them to find, to master, to understand. Watching the children teaches me something new every day. Consider this, for example. People say, "Let children be free to choose their activities, and they will always take the path of least resistance. They'll never develop character to face hardship."

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First of all, there's the arrogance of it, as if you or I or some panel of experts could choose out of the vast ocean of human knowledge the right combination of droplets everyone needs to imbibe. The very same people who complain about narrowness can be found the next day complaining about overexposure and over stimulation. Finally, there's the assumption that it's bad to be narrow. Bad for whom? For Mozart? For Einstein? For Wilbur and Orville Wright? Our greatest national heroes are praised for their single-minded devotion to some cause or other. Is that well-rounded?

Excerpted from 'The Sudbury School' by Daniel Greenberg

What was the author's major learning as a newly minted teacher?

A) Students will not learn, whatever anyone else does. B) Students will learn what they don't want to learn.
C) Students will learn what they want to learn. D) Students will not learn what they want to learn.

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

Question No. : 18

It all started with learning about learning. I remember clearly my early teaching experience in college. I knew my subject, and I had read books on pedagogy, psychology, and development. I was sitting on top of the world — so "knowledgeable,". . . Reality came in small doses. First, I found out that all those eager, happy-looking faces sitting before me were masking massive boredom and indifference. Then I found out that they weren't getting most of what I was saying. "Here's an important point," I would intone with majestic emphasis, "and it provides an insight the textbooks don't give." Alas, to no avail. When the exam papers came back, the textbook version, memorized carefully, was all I ever saw.

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Excerpted from 'The Sudbury School' by Daniel Greenberg

What role do teachers play in the current school that the author is associated with?

A) Minor actors B) Villains C) Heroes D) Directors.

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

Question No. : 19

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Excerpted from 'The Sudbury School' by Daniel Greenberg.

Based on your understanding of the ideas expressed in the passage, what would you expect an ungainly kid to do in the author's school?

A) Play sports all day. B) Be ensconced in the school library. C) Spend time outdoors, fishing in the school pond.
D) Tutor junior kids in their areas of difficulty.

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

Question No. : 20

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Excerpted from 'The Sudbury School' by Daniel Greenberg

Which of the following could be the paragraph that immediately follows the last paragraph?

A) Children will learn what they will learn, when they want and how they want, our best efforts notwithstanding. At our school, I see this truth in action all the time. I never have been able to unlock the secret of how they really do it.
B) It all comes back to humility. The smartest of us is just a tiny bit less stupid than the stupidest of us. Let children be. They will learn all they have to, and more, if we don't mess with them, unless and until they beg us to.
C) Students learn to relate to people, because they are with people, of all ages, all day. They learn to solve problems, because they have to. "The buck stops here" said the sign on President Truman's desk, and "here" is each student's own place. There is no one else to bail them out.
D) Year after year, we carry on, calling ourselves purveyors of knowledge, providers of education. When all else fails, money is applied as a plaster to heal the wounds.

DIRECTIONS for the question: *The question consists of four/five sentences on a topic. Select the option that indicates grammatically* ***incorrect or inappropriate*** *sentence/s.*

Question No. : 21

A. What writers struggle to express through numerous newspaper columns, the cartoon manages in a pointed one-liner.
B. Little wonder then, that the first thing most of us like to see when we pick up a newspaper is the cartoon.
C. Simple though it may seems, making a cartoon is an art that requires a combination of hard work, training and a good sense of humour.
D. Cartoonists say that the cartoons that make us laugh the most are in fact the cartoons that are hardest to make.
E. The advice established cartoonists give is that just because you can sketch, don't take it for granted that one will become a

cartoonist.

A) C and D only B) C, D and E C) D and E only D) A and B only

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

Question No. : 22

In 1962, JFK told the country about a dream he had, a dream to put a person on the moon by the end of the decade. The eponymous moonshot. At X -- formerly called Google X – we are dreaming up technologies that we hope can make the world a wonderful place. We use the word "moonshots" to remind us to keep our visions big -- to keep dreaming. And we use the word "factory" to remind ourselves that we want to have concrete visions -- concrete plans to make them real. Here's our moonshot blueprint. Number one: we want to find a huge problem in the world that affects many millions of people. Number two: we want to find or propose a radical solution for solving that problem. And then number three: there has to be some reason to believe that the technology for such a radical solution could actually be built.

But I have a secret for you. The moonshot factory is a messy place. But rather than avoid the mess, pretend it's not there, we've tried to make that our strength. We spend most of our time breaking things and trying to prove that we're wrong. Run at all the hardest parts of the problem first. Get excited and cheer, "Hey! How are we going to kill our project today?"

I want to show you a project that we've had to leave behind on the cutting room floor. Economic development of landlocked countries is limited by lack of shipping infrastructure. The radical solution? A lighter-than-air, variable-buoyancy cargo ship. This has the potential to lower, at least overall, the cost, time and carbon footprint of shipping without needing runways. We came up with this clever set of technical breakthroughs that together might make it possible for us to lower the cost enough that we could actually make these ships -- inexpensively enough in volume. But however cheap they would have been to make in volume it turned out that it was going to cost close to 200 million dollars to design and build the first one. Because X is structured with these tight feedback loops of making mistakes and learning and new designs, we can't spend 200 million dollars to get the first data point about whether we're on the right track or not. If there's an Achilles' heel in one our projects, we want to know it now, up front, not way down the road. So we killed this project.

Discovering a major flaw in a project doesn't always mean that it ends the project. Sometimes it actually gets us onto a more productive path. Probably the craziest sounding project we have is Project Loon. We're trying to make balloon-powered Internet. A network of balloons in the stratosphere that beam an internet connection down to rural and remote areas of the world. But you can't just take a cell tower, strap it to a balloon and stick it in the sky. The winds are too strong, it would be blown away. And the balloons are too high up to tie it to the ground. Here comes the crazy moment. What if, instead, we let the balloons drift and we taught them how to sail the winds to go where the needed to go? It turns out the stratosphere has winds that are going in quite different speeds and directions in thin strata. The idea is to have enough balloons so as one balloon floats out of your area, there's another balloon ready to float into place. But is that good enough for it to navigate through the world? Our latest balloon, can navigate a two-mile vertical stretch of sky and can sail itself to within 500 meters of where it wants to go from 20,000 kilometers away.

Being audacious and working on big, risky things makes people inherently uncomfortable. You cannot yell at people and force them to fail fast. People resist. They worry. "What will happen to me if I fail?" The only way to get people to work on audacious ideas and have them run at all the hardest parts of the problem first, is if you make that the path of least resistance for them. We work hard at X to make it safe to fail. Teams kill their ideas as soon as the evidence is on the table because they're rewarded for it. We have bonused every single person on teams that ended their projects. We believe in dreams at the moonshot factory. But enthusiastic skepticism is not the enemy of boundless optimism. It's optimism's perfect partner.

Excerpted from TED talk by Astro Teller

Because of the adjective eponymous for 'moonshot', in the second sentence of the passage, we can infer that -

A) The idea is more important than the person behind the idea.
B) Moonshot has come to mean something big and audacious. C) Having a name to an idea makes it easier to remember.
D) The same words is used to make a reference to the main character as well as a larger story.

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

Question No. : 23

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Here is an example of a X project.

With 1.2 million people dying on the roads globally every year, building a car that drives itself was a natural moonshot to take. Three and a half years ago, when we had these Lexus, retrofitted, self-driving cars in testing, they were doing so well, we gave them out to other Googlers to find out what they thought of the experience. And what we discovered was that our plan to have the cars do almost all the driving and just hand over to the users in case of emergency was a really bad plan.

Which of the following, points to a flaw in the thinking that could have been uncovered in user trials?

A) Traffic regulatory authorities were not convinced of the safety of having such cars on the road.
B) A retrofitted car did not perform as well as a self driving car built from scratch.
C) Users didn't stay alert in case the car needed to hand control back to them.
D) Software upgrades had to be issued frequently because of a lot of near-misses.

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

Question No. : 24

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Based on your understanding of the loon project, which of these would represent appropriate navigational equipment for the balloon?

A) Sensors continuously detect outside wind speed and direction. Solar powered turbines change the direction of the balloon so that it continues to hover in the intended area where it can continue to receive and transmit signals.
B) Having two ballons, one inside the other. The outer one is filled with air, the inner with helium. The outer balloon pumps air in to make itself heavier, or lets air out to make it lighter. And these weight changes allow it to rise or fall.
C) A Do-Nothing philosophy which allows balloons to move with the prevailing winds.
D) Most of the difficulties of aerial navigation vanish when two balloons are employed, one aiding the other as in alternate warping. Each one of the two balloons should alternately present a large surface area to offer resistance to the air, and this surface should be quickly reversed when necessary to lessen resistance.

DIRECTIONS for the 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. The majority of those who reject human laws and proclaim their liberty and their decision to "live their own life" do so only in obedience to the most ordinary vital movements which they disguise and try to justify, if not to their own eyes, at least to the eyes of others.
2. The child can be taught, as he grows up, the relativity of all moral and social laws so that he may find in himself a higher and truer law.
3. To give a moral law to a child is evidently not an ideal thing; but it is very difficult to do without it.
4. But here one must proceed with circumspection and insist on the difficulty of discovering that true law.
5. They give a kick to morality, simply because it is a hindrance to the satisfaction of their instincts.

A) 32415 B) C) D)

DIRECTIONS for the 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. They are prompted to induce it by going to scary movies or engaging in extreme sports or by artificial means such as taking narcotics.
2. The hormone adrenaline is a neurotransmitter, but unlike dopamine, which can push us toward danger in the course of achieving certain goals, adrenaline is designed to help us escape from danger.
3. For some people that adrenaline rush can become a reward the brain seeks.
4. It works like this: When the brain perceives a threat, it triggers the release of adrenaline into the bloodstream, which in turn stimulates the heart, lungs, muscles, and other parts of the body to help flee or fight in a life-threatening situation.
5. This chemical release generates a feeling of exhilaration that continues after the threat has passed, as the adrenaline clears the system.

A) 24531 B) C) D)

DIRECTIONS for the 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. : 27

1. Although the lizard may stake a claim to its habitat, it exerts total indifference toward the well-being of its young.
2. Listen to the anguished squeal of a dolphin separated from its pod or witness the sight of elephants mourning their dead, however, and it is clear that a new development is at play.
3. Scientists have identified this as the limbic cortex.
4. Unique to mammals, the limbic cortex impels creatures to nurture their offspring by delivering feelings of tenderness and warmth to the parent when children are nearby.
5. These same sensations also cause mammals to develop various types of social relations and kinship networks.

A) 12345 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. : 28

1. In the "bigger is better" climate, calisthenics was relegated to groups perceived to be vulnerable, such as women, people recuperating from injuries and school students.
2. The body builders also relied on free weights and machines, which allowed them to target and bloat the size of individual muscles rather than develop a naturally proportioned body.
3. Although some of the strongest and most physically developed human beings ever to have lived acquired their abilities through the use of sophisticated calisthenics, a great deal of this knowledge was discarded and the method was reduced to nothing more than an easily accessible and readily available activity.

4. Those who mastered the rudimentary skills of calisthenics could expect to graduate to weight training rather than advanced calisthenics.

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. : 29

1. Yes, it's taken for granted that creating is hard, but also that it's somehow fundamentally unserious.
2. In the popular imagination, artists tend to exist either at the pinnacle of fame and luxury or in the depths of penury and obscurity — rarely in the middle, where most of the rest of us toil and dream.
3. But the elevation of the amateur over the professional trivializes artistic accomplishment and helps to undermine the already precarious living standards that artists have been able to enjoy.
4. They are subject to admiration, envy, resentment and contempt, but it is odd how seldom their efforts are understood as work.

A) 3 B) C) D)

DIRECTIONS for the question: *In each sentence, the highlighted word is used in different ways. Choose the option/ options in which the usage of the word is incorrect.*

Question No. : 30

FLAT

A) The team had the smoothest possible path laid out at the World Cup yet still fell flat on their face.
B) He has been totally objective and even flat rejected some of the sample devices.
C) The ex-chief of command was lying flat out on the small bunk, eyes boring a hole into the ceiling.
D) Some of the dialogue falls flat with some forced jokes, but overall the writing is clever enough to propel the movie.

DIRECTION for the question: *Answer the question based on the information given in the passage.*

Question No. : 31

The option of arbitration involves the police officer giving each party an opportunity to explain his/her side and, based on the facts presented, rendering a decision. There are situations in which arbitration, maybe appropriate, for example, a case in which there is absolutely no doubt that a piece of property belongs to another. If I were to strike you over the head and take your Walkman, not only would I be guilty of battery but I also would have created a dispute. The dispute is suited for arbitration, since upon examination of the facts, it will become clear that I am not entitled to the property. The Walkman belongs to you. The officer has the legitimate right to order me to return your Walkman. Many interpersonal disputes in society are not so cut-and-dry. Often, both parties/disputants have a legitimate claim to the (identical) outcome sought by the other. Since identical outcomes for each Party are not always feasible, it is through collective and integrative problem-solving that parties often compromise. Most mediated agreements are compromises. For this reason, mediation is a preferred conflict-resolution method, since the parties get to have control over the contents of the agreement-they make the agreement, themselves. In this way, both parties walk away from the process, winners and with dignity intact, although they may walk away with less than what they originally sought.

Which of the following can you infer from the paragraph given above?

A) Whenever the facts are clear, arbitration should be used for conflict resolution, else use mediation.
B) Mediation is a process that should be used only if arbitration has failed to resolve the conflict.
C) Mediation should be preferred over arbitration as a dispute resolving mechanism, as it allows both parties to maintain their self-respect.
D) Compromise is the essential thing in any dispute resolution - both parties involved should be ready to lose something to gain something.

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

Question No. : 32

People of African descent who found themselves enslaved in the New World, and specifically on United States soil, were not brought to the West to create poems, plays, short stories, essays, and novels. They were brought for the bodies, their physical labor. Denied access to literacy by law and custom, anything they wanted to retain in the way of cultural creation had to be passed down by word of mouth, or, in terms of crafts, by demonstration and imitation. After long hours of work in cotton and tobacco fields, therefore, blacks would occasionally gather in the evenings for storytelling. Tales they shared during slavery were initially believed to focus almost exclusively on animals. However, as more and more researchers became interested in African American culture after slavery and in the early twentieth century, they discovered a strand of tales that focused on human actors. It is generally believed that enslaved persons did not share with prying researchers the tales containing human characters because the protagonists were primarily tricksters, and the tales showcased actions that allowed those tricksters to get the best of their so-called masters.

1. People of African descent, regaled their stories, sprinkling them with the deception of their masters, in order for more enslaved persons to make use of them to lead a better life.
2. People of African descent, from their cultures, brought with them stories and poems which they narrated or recited to their brethren so that they would remain in contact with their motherland.
3. African Americans, slaves brought to the New World for their physical capabilities and left illiterate, resorted to telling stories in order to keep their culture alive - first about animals and then about characters that pulled the wool over the eyes of their masters.
4. Strenuous work in the field forced the African Americans to devise ways and means of getting the better of their masters and thus creating a life deprived of rigour.

A) 3 B) C) D)

DIRECTION for the question: *Answer the question based on the information given in the passage.*

Question No. : 33

If it were possible that a people brought up under an intolerant and arbitrary system could subvert that system without acts of cruelty and folly, half the objections to despotic power would be removed. We should, in that case, be compelled to acknowledge that it at least produces no pernicious effects on the intellectual and moral character of a nation. We deplore the outrages which accompany revolutions. But the more violent the outrages, the more assured we feel that a revolution was necessary. The violence of those outrages will always be proportioned to the ferocity and ignorance of the people; and the ferocity and ignorance of the people will be proportioned to the oppression and degradation under which they have been accustomed to live. Thus it was in our civil war. The heads of the church and state reaped only that which they had sown. The government had prohibited free discussion: it had done its best to keep the people unacquainted with their duties and their rights. The retribution was just and natural.

Which of the following can you infer from the paragraph given above?

A) If our rulers suffered from popular ignorance, it was because they had themselves taken away the key of knowledge.
B) If the people were assailed with blind fury, it was because they had unknowingly exacted an equally blind submission.
C) The ignorance of the people led to them being oppressed and hence remaining unacquainted with their rights and duties.
D) When people are submissive under a dominating power, and there is a realisation on their part about their rights, a warlike situation is inevitable and justified.

DIRECTIONS for the question: *Given below are four/five sentences. Identify the sentence(s) that is/are* ***correct*** *in terms of grammar and usage (including spelling, punctuation and logical consistency). Then, choose the* ***most appropriate*** *option.*

Question No. : 34

A. It is a well-known fact that the Chinese regarded the turtle as a supernatural creature blessed with magical qualities and long life.
B. To the fisherman whose livelihood comes from the perilous sea, the turtle is both a protector as well as a symbol of survival.
C. You can thus imagine the excitement in Hong Kong when some fishermen found a giant turtle in the South China Sea one April morning.
D. A fleet of Chinese trawlers had set out in the grey-blue dawn to catch fish.
E. When they drew in their nets, the fishermen noticed something unusual entangled among their fish, prawns and squid - it was a giant turtle.

A) C and D only B) C and E only C) A and B only D) All of the above

Section : DI & Reasoning

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

Question No. : 35

In the addition problem stated below has a unique solution. In the problem, each letter of the alphabet represents a unique digit from 1 to 9, both inclusive.

```
  CROSS
+ ROADS
 DANGER
```

What is the value of ROAD + RAGE?

A) GRADE B) DONOA C) SARGE D) AORCD

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

Question No. : 36

In the addition problem stated below has a unique solution. In the problem, each letter of the alphabet represents a unique digit from 1 to 9, both inclusive.

```
  CROSS
+ ROADS
 DANGER
```

Which of the following numbers cannot be expressed as the sum of the squares of two natural numbers?

A) DOCR B) SGOD C) AROA D) GOOA

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

Question No. : 37

In the addition problem stated below has a unique solution. In the problem, each letter of the alphabet represents a unique digit from 1 to 9, both inclusive.

```
  CROSS
+ ROADS
 DANGER
```

What is the remainder when GRAND is divided by E?

A) D B) A C) N D) O

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

Question No. : 38

In the addition problem stated below has a unique solution. In the problem, each letter of the alphabet represents a unique digit from 1 to 9, both inclusive.

CROSS
+ ROADS
DANGER

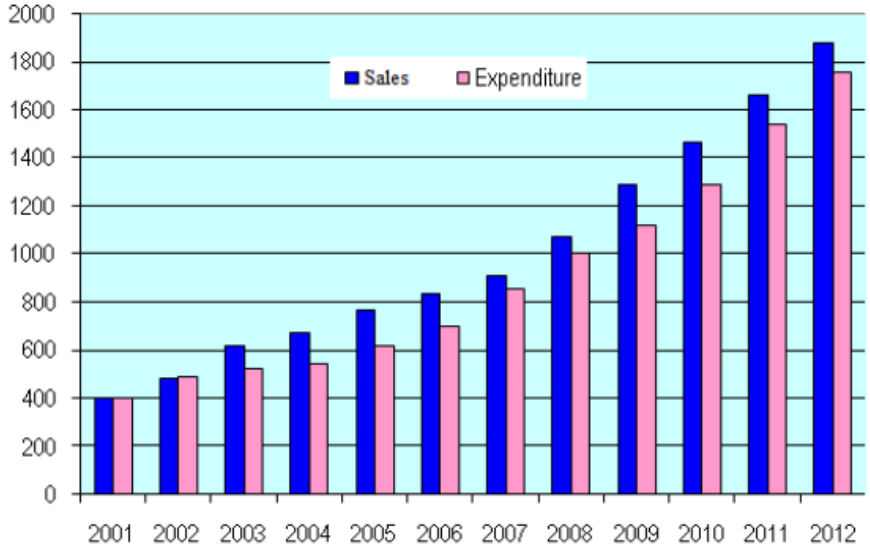
What is the value of SONG + DANCE? (in alphabetical value)

A) DCDND B) DCNDD C) DCDRD D) DCRDD

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

Question No. : 39

RCF Bearings Ltd. is the leading supplier of bearings to the auto industry. The bar chart below shows the value of sales (in Rs. lakh) and the total expenditure (in Rs. lakhs) of the company over the period 2001 to 2012.



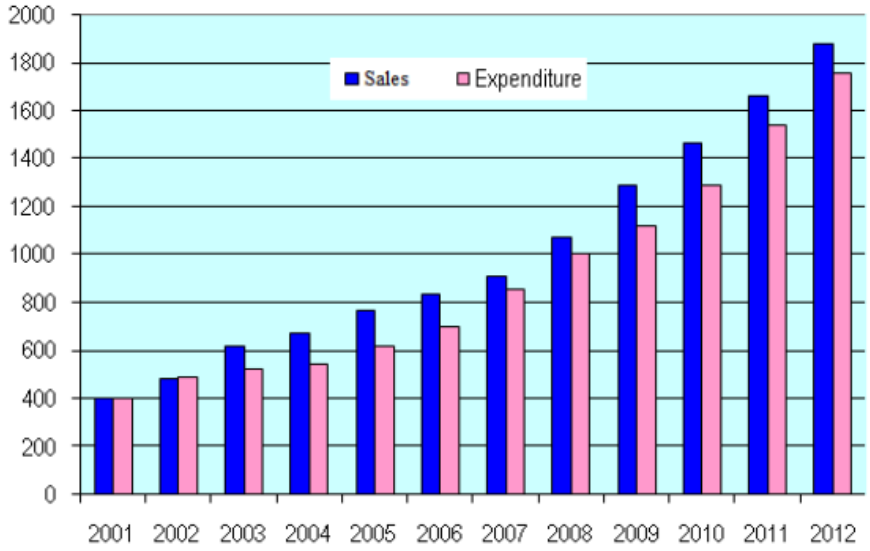
If profit is calculated as the difference between sales and expenditure, in which of the following years was the profit (in Rs. lakhs) of RCF Bearings Ltd. the highest?

A) 2008 B) 2010 C) 2011 D) 2012

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

Question No. : 40

RCF Bearings Ltd. is the leading supplier of bearings to the auto industry. The bar chart below shows the value of sales (in Rs. lakh) and the total expenditure (in Rs. lakhs) of the company over the period 2001 to 2012.



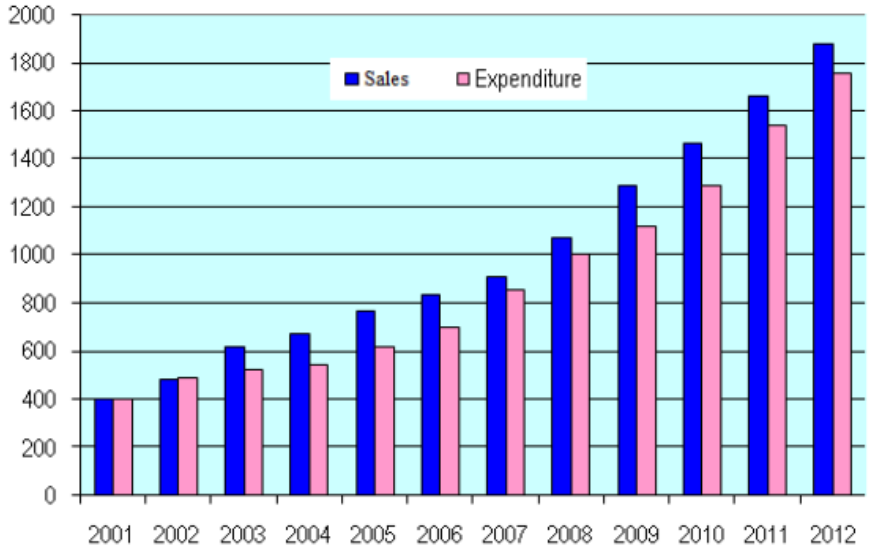
What was the approximate increase in the sales of RCF Bearings Ltd. from 2007 to 2012?

A) 200% B) 110% C) 90% D) 70%

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

Question No. : 41

RCF Bearings Ltd. is the leading supplier of bearings to the auto industry. The bar chart below shows the value of sales (in Rs. lakh) and the total expenditure (in Rs. lakhs) of the company over the period 2001 to 2012.



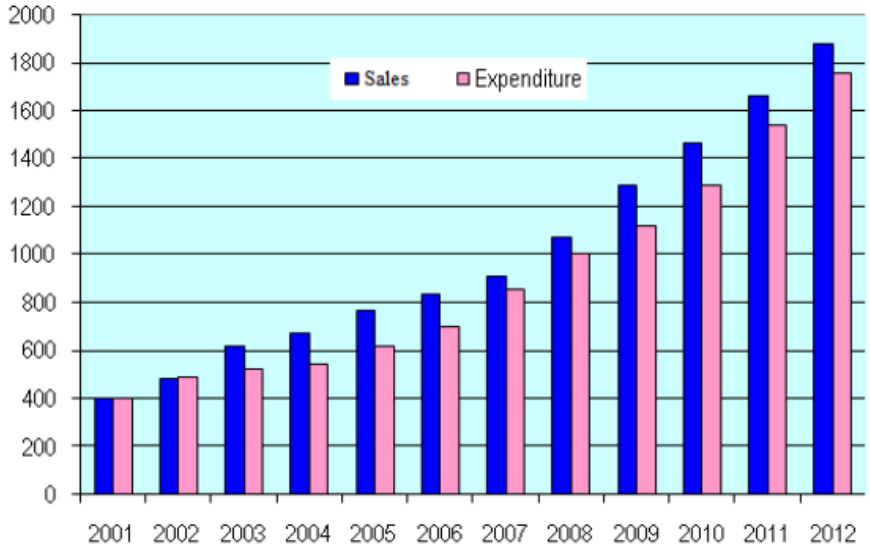
Which of the following periods registered the maximum % increase in the sales of RCF Bearings Ltd.?

A) 2002 – 2003 B) 2005 – 2006 C) 2008 – 2009 D) 2011 – 2012

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

Question No. : 42

RCF Bearings Ltd. is the leading supplier of bearings to the auto industry. The bar chart below shows the value of sales (in Rs. lakh) and the total expenditure (in Rs. lakhs) of the company over the period 2001 to 2012.



Profit is calculated as the difference between sales and expenditure. By what percent did the profit of RCF Bearings Ltd. increase from 2003 to 2010?

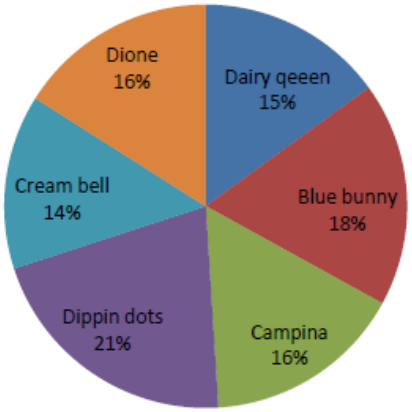
A) 120% B) 105% C) 70% D) 20%

DIRECTIONS for the question: *Go through the pie chart/s given below and answer the question that follows.*

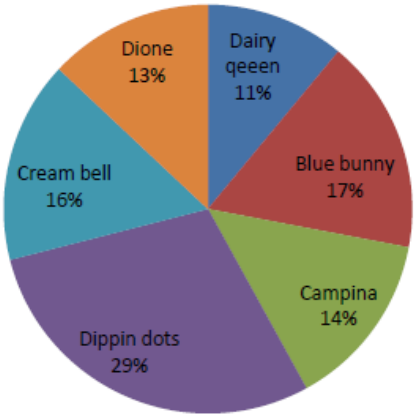
Question No. : 43

The pie charts represent the quantity of ice cream produced and the amount earned by selling them in the year 2012 by six companies respectively. These 6 companies control the complete market.

Total quantity of ice cream produced = 3500 tons



Total sales = Rs. 64 Billion



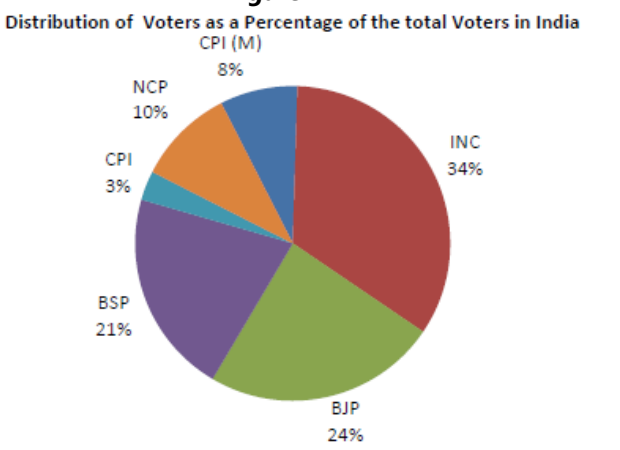
Which company's ice cream has the highest selling price per ton in the year 2012?

A) Cream Bell B) Campina C) Blue Bunny D) Dippin Dots

DIRECTIONS for the question: *Go through the pie chart/s given below and answer the question that follows.*

Question No. : 44

Figure 1



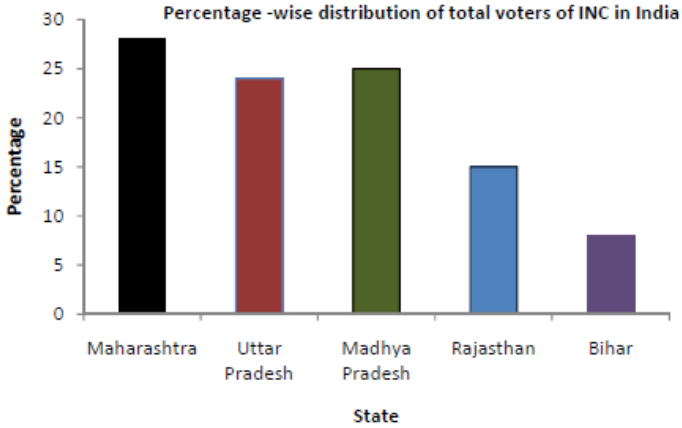


Figure 2

What is the total number of voters in India if the total voters who vote in Maharashtra is 1,530,200?

A) If the question can be answered by figure 1 alone and figure 2 is not required.
B) If the question can be answered by figure 2 alone and figure 1 is not required.
C) If the question can be answered by both of the figures taken together and not by any one of these figures.
D) If the question cannot be answered even by using both the figures together.

DIRECTIONS for the question: *Go through the pie chart/s given below and answer the question that follows.*

Question No. : 45

Figure 1

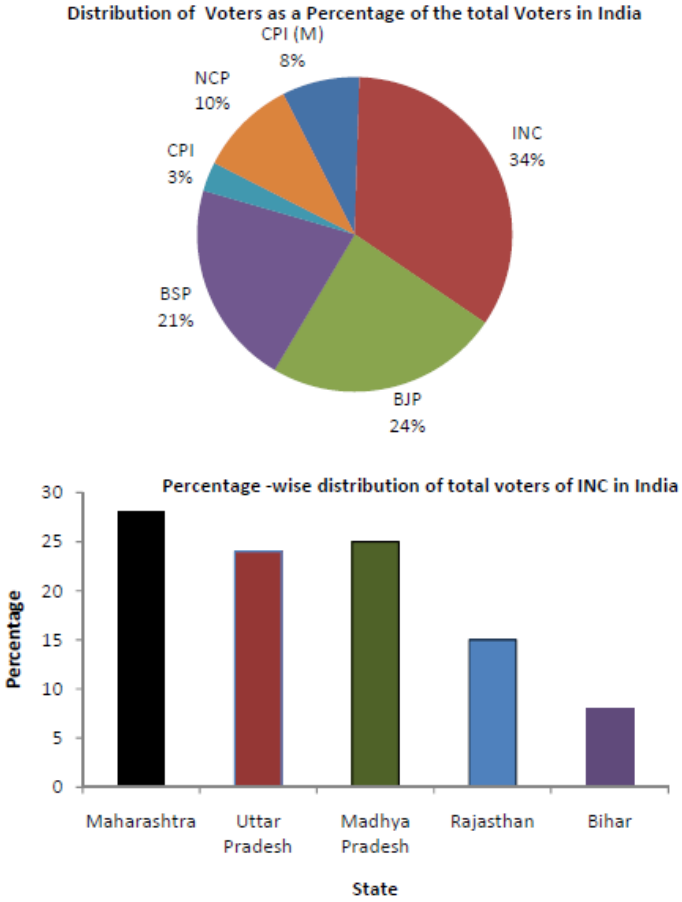


Figure 2

Given that the total population of people whose age is less than 18 years is 1,528,644 in India. What is the total population of India, if the given were to be the only five states of India?

A) If the question can be answered by figure 1 alone and figure 2 is not required.
B) If the question can be answered by figure 2 alone and figure 1 is not required.
C) If the question can be answered by both of the figures taken together and not by any one of these figures.
D) If the question cannot be answered even by using both the figures together.

DIRECTIONS for the question: *Go through the pie chart/s given below and answer the question that follows.*

Question No. : 46

Figure 1

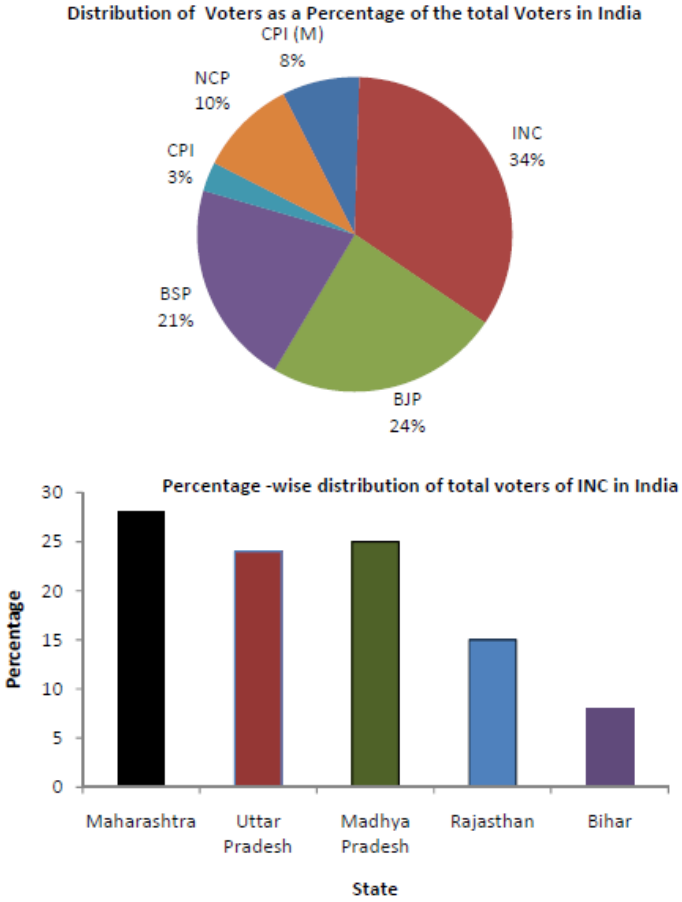


Figure 2

What is the ratio of the total voters of Maharashtra to the total voters of CPI (M)? Given that total number of voters in Maharashtra is 1,530,200 and the total number of voters of CPI in India is 47,022.

A) If the question can be answered by figure 1 alone and figure 2 is not required.
B) If the question can be answered by figure 2 alone and figure 1 is not required.
C) If the question can be answered by both of the figures taken together and not by any one of these figures.
D) If the question cannot be answered even by using both the figures together.

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

Question No. : 47

The principal of the Rosemary Public School is preparing for the annual meeting of the PTA of the Kindergarten classes. This year she has chosen six classrooms along the same corridor in the school. The six classrooms, from left to right, are named Daffodil, Tulip, Lily, Primrose, Chrysanthemum and Violet. Five of the classrooms will be assigned one of the teachers – Mrs. Deshmane, Mrs. Kulkarni, Mrs. Mohite, Mrs. Purohit and Mrs. Shinde and one of the assistants – Miss Damini, Miss Ketaki, Miss Manjiri, Miss Padmini and Miss Sharada and the remaining classroom will be used to serve refreshments.
Miss Sharada is assigned to the same classroom as Mrs. Mohite while Mrs. Shinde is not assigned to the same classroom as Miss Damini.
Miss Ketaki is assigned the classroom next to the classroom assigned to Mrs. Mohite.
Mrs. Kulkarni is assigned to Chrysanthemum while Mrs. Purohit is assigned to either Tulip or Lily.
The classroom used to serve refreshments is not at either end of the corridor.

Miss Ketaki cannot be assigned to which of the following rooms?

A) Daffodil B) Lily C) Chrysanthemum D) Violet

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

Question No. : 48

The principal of the Rosemary Public School is preparing for the annual meeting of the PTA of the Kindergarten classes. This year she has chosen six classrooms along the same corridor in the school. The six classrooms, from left to right, are named Daffodil, Tulip, Lily, Primrose, Chrysanthemum and Violet. Five of the classrooms will be assigned one of the teachers – Mrs. Deshmane, Mrs. Kulkarni, Mrs. Mohite, Mrs. Purohit and Mrs. Shinde and one of the assistants – Miss Damini, Miss Ketaki, Miss Manjiri, Miss Padmini and Miss Sharada and the remaining classroom will be used to serve refreshments.
Miss Sharada is assigned to the same classroom as Mrs. Mohite while Mrs. Shinde is not assigned to the same classroom as Miss Damini.
Miss Ketaki is assigned the classroom next to the classroom assigned to Mrs. Mohite.
Mrs. Kulkarni is assigned to Chrysanthemum while Mrs. Purohit is assigned to either Tulip or Lily.
The classroom used to serve refreshments is not at either end of the corridor.

If Mrs. Shinde is assigned to Lily, which of the following must be true?

A) Mrs. Purohit is assigned to Tulip B) Miss Padmini is assigned to Lily C) Miss Manjiri is assigned to Primrose
D) Miss Damini is assigned to Chrysanthemum

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

Question No. : 49

The principal of the Rosemary Public School is preparing for the annual meeting of the PTA of the Kindergarten classes. This year she has chosen six classrooms along the same corridor in the school. The six classrooms, from left to right, are named Daffodil, Tulip, Lily, Primrose, Chrysanthemum and Violet. Five of the classrooms will be assigned one of the teachers – Mrs. Deshmane, Mrs. Kulkarni, Mrs. Mohite, Mrs. Purohit and Mrs. Shinde and one of the assistants – Miss Damini, Miss Ketaki, Miss Manjiri, Miss Padmini and Miss Sharada and the remaining classroom will be used to serve refreshments.
Miss Sharada is assigned to the same classroom as Mrs. Mohite while Mrs. Shinde is not assigned to the same classroom as Miss Damini.
Miss Ketaki is assigned the classroom next to the classroom assigned to Mrs. Mohite.
Mrs. Kulkarni is assigned to Chrysanthemum while Mrs. Purohit is assigned to either Tulip or Lily.
The classroom used to serve refreshments is not at either end of the corridor.

If Tulip is used to serve refreshments, which of the following could be true?

A) Mrs. Shinde is assigned a classroom next to that of Mrs. Deshmane's
B) Miss Ketaki is assigned to the same classroom as Mrs. Deshmane
C) Mrs. Shinde is assigned to a classroom at one of the ends of the corridor
D) Miss Ketaki is assigned to a classroom at one of the ends of the corridor

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

Question No. : 50

The principal of the Rosemary Public School is preparing for the annual meeting of the PTA of the Kindergarten classes. This year she has chosen six classrooms along the same corridor in the school. The six classrooms, from left to right, are named Daffodil, Tulip, Lily, Primrose, Chrysanthemum and Violet. Five of the classrooms will be assigned one of the teachers – Mrs. Deshmane, Mrs. Kulkarni, Mrs. Mohite, Mrs. Purohit and Mrs. Shinde and one of the assistants – Miss Damini, Miss Ketaki, Miss Manjiri, Miss Padmini and Miss Sharada and the remaining classroom will be used to serve refreshments.
Miss Sharada is assigned to the same classroom as Mrs. Mohite while Mrs. Shinde is not assigned to the same classroom as Miss Damini.
Miss Ketaki is assigned the classroom next to the classroom assigned to Mrs. Mohite.
Mrs. Kulkarni is assigned to Chrysanthemum while Mrs. Purohit is assigned to either Tulip or Lily.
The classroom used to serve refreshments is not at either end of the corridor.

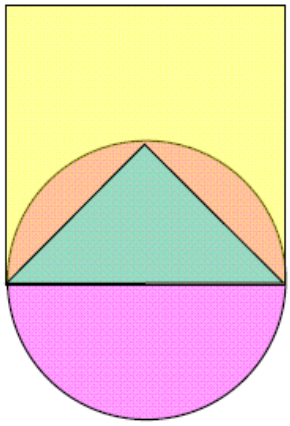
If Mrs. Shinde is assigned to a classroom next to that of Mrs. Deshmane's, which of the following must be true?

A) Miss Padmini is assigned to Tulip B) Miss Damini is assigned to Lily C) Lily is used to serve refreshments
D) Primrose is used to serve refreshments

DIRECTIONS for the question: *Go through the following graph/information and answer the question that follows.*

Question No. : 51

The 2730 families in a township own at least one vehicle from amongst Activa, Pulsar and Royal Enfield. In the diagram below, the square depicts the number of families who own an Activa each, the circle depicts the number of families who own a Pulsar each and the isosceles right triangle depicts the number of families who own a Royal Enfield each. The overlaps account for families who own more than one of the three vehicles.



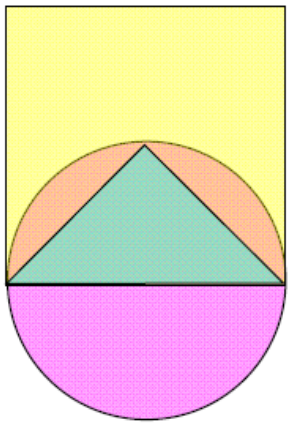
What is the total number of vehicles? (in numerical value)

A) 3990 B) C) D)

DIRECTIONS for the question: *Go through the following graph/information and answer the question that follows.*

Question No. : 52

The 2730 families in a township own at least one vehicle from amongst Activa, Pulsar and Royal Enfield. In the diagram below, the square depicts the number of families who own an Activa each, the circle depicts the number of families who own a Pulsar each and the isosceles right triangle depicts the number of families who own a Royal Enfield each. The overlaps account for families who own more than one of the three vehicles.



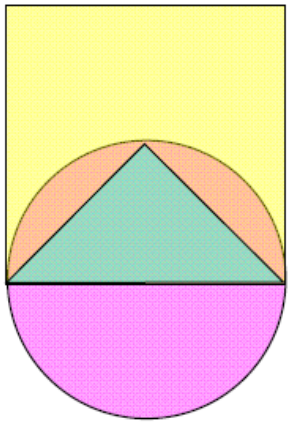
How many more families own exactly one vehicle than families who own at least two vehicles? (in numerical value)

A) 1190 B) C) D)

DIRECTIONS for the question: *Go through the following graph/information and answer the question that follows.*

Question No. : 53

The 2730 families in a township own at least one vehicle from amongst Activa, Pulsar and Royal Enfield. In the diagram below, the square depicts the number of families who own an Activa each, the circle depicts the number of families who own a Pulsar each and the isosceles right triangle depicts the number of families who own a Royal Enfield each. The overlaps account for families who own more than one of the three vehicles.



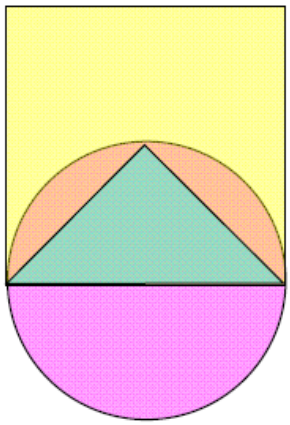
What is the ratio of the number of families who own exactly one vehicle to the number of families who own exactly two vehicles?

A) 7 : 1 B) 14 : 3 C) 17 : 11 D) 17 : 4

DIRECTIONS for the question: *Go through the following graph/information and answer the question that follows.*

Question No. : 54

The 2730 families in a township own at least one vehicle from amongst Activa, Pulsar and Royal Enfield. In the diagram below, the square depicts the number of families who own an Activa each, the circle depicts the number of families who own a Pulsar each and the isosceles right triangle depicts the number of families who own a Royal Enfield each. The overlaps account for families who own more than one of the three vehicles.



If an Activa costs Rs.60,000, a Pulsar costs Rs.90,000 and a Royal Enfield costs Rs.120,000, what is the value, in lakhs, of all the vehicles owned by all the families? (in lakh Rs.)

A) 3150 B) C) D)

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

Question No. : 55

The Metro Project was up for voting before the standing committee of the PMC. Each of the seven corporators on the standing committee voted either for or against the project. Of the seven corporators, two belong to the AFA, two belong to the IMA and three belong to the NDA. No corporator belongs to more than one party. A journalist reported the following about the way the corporators voted.

- Of the seven corporators, at least two voted for the Metro Project and at least two voted against the Metro Project.
- If the three NDA corporators voted the same way as each other, then no AFA corporator voted the same way.
- At least one AFA corporator voted against the Metro Project.
- If the two AFA corporators and at least one NDA corporator voted the same way as each other, then both IMA corporators voted that way

If the two IMA corporators did not vote the same way as each other, then which of the following could be true?

A) Exactly one AFA corporator and one NDA corporator voted for the Metro Project
B) Exactly one AFA corporator and all three NDA corporators voted for the Metro Project
C) Exactly two AFA corporators and one NDA corporator voted for the Metro Project
D) Exactly two AFA corporators and two NDA corporators voted for the Metro Project

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

Question No. : 56

The Metro Project was up for voting before the standing committee of the PMC. Each of the seven corporators on the standing committee voted either for or against the project. Of the seven corporators, two belong to the AFA, two belong to the IMA and three belong to the NDA. No corporator belongs to more than one party. A journalist reported the following about the way the corporators voted.

- Of the seven corporators, at least two voted for the Metro Project and at least two voted against the Metro Project.
- If the three NDA corporators voted the same way as each other, then no AFA corporator voted the same way.
- At least one AFA corporator voted against the Metro Project.
- If the two AFA corporators and at least one NDA corporator voted the same way as each other, then both IMA corporators voted that way

If the three NDA corporators voted the same way as each other, which of the following must be true?

A) Both IMA corporators voted for the Metro Project B) All three NDA corporators voted for the Metro Project
C) Of the two AFA corporators, one voted for the Metro Project and one voted against it
D) Of the two IMA corporators, one voted for the Metro Project and one voted against it

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

Question No. : 57

The Metro Project was up for voting before the standing committee of the PMC. Each of the seven corporators on the standing committee voted either for or against the project. Of the seven corporators, two belong to the AFA, two belong to the IMA and three belong to the NDA. No corporator belongs to more than one party. A journalist reported the following about the way the corporators voted.

- Of the seven corporators, at least two voted for the Metro Project and at least two voted against the Metro Project.
- If the three NDA corporators voted the same way as each other, then no AFA corporator voted the same way.
- At least one AFA corporator voted against the Metro Project.
- If the two AFA corporators and at least one NDA corporator voted the same way as each other, then both IMA corporators voted that way

If exactly two of the seven corporators voted against the Metro Project, which of the following must be true?

A) Both IMA corporators voted for the Metro Project B) Exactly one AFA corporator voted for the Metro Project
C) Exactly two NDA corporators voted for the Metro Project D) None of these

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

Question No. : 58

The Metro Project was up for voting before the standing committee of the PMC. Each of the seven corporators on the standing committee voted either for or against the project. Of the seven corporators, two belong to the AFA, two belong to the IMA and three belong to the NDA. No corporator belongs to more than one party. A journalist reported the following about the way the corporators voted.

- Of the seven corporators, at least two voted for the Metro Project and at least two voted against the Metro Project.
- If the three NDA corporators voted the same way as each other, then no AFA corporator voted the same way.
- At least one AFA corporator voted against the Metro Project.
- If the two AFA corporators and at least one NDA corporator voted the same way as each other, then both IMA corporators voted that way

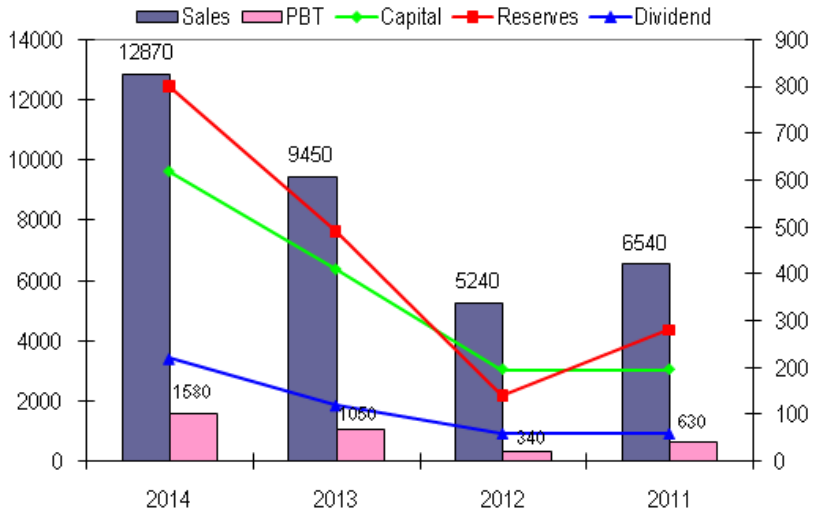
If both AFA corporators voted the same way as each other, but the three NDA corporators did not vote the same way as each other, which of the following cannot be true?

A) Both AFA corporators voted against the Metro Project B) Both IMA corporators voted for the Metro Project
C) Exactly two NDA corporators voted for the Metro Project
D) Exactly five of the seven corporators voted against the Metro Project

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

Question No. : 59

The bar graph below (left scale) shows information about the Sales and Profit Before Tax (PBT), while the line graph (right scale) shows information about the Capital, Reserves and Dividend of a company over four years from 2011 to 2014. All figures are in Rs. lakhs. Tax is paid as a percentage of PBT and part of the remaining amount is paid as Dividend and the rest is moved to Reserves.



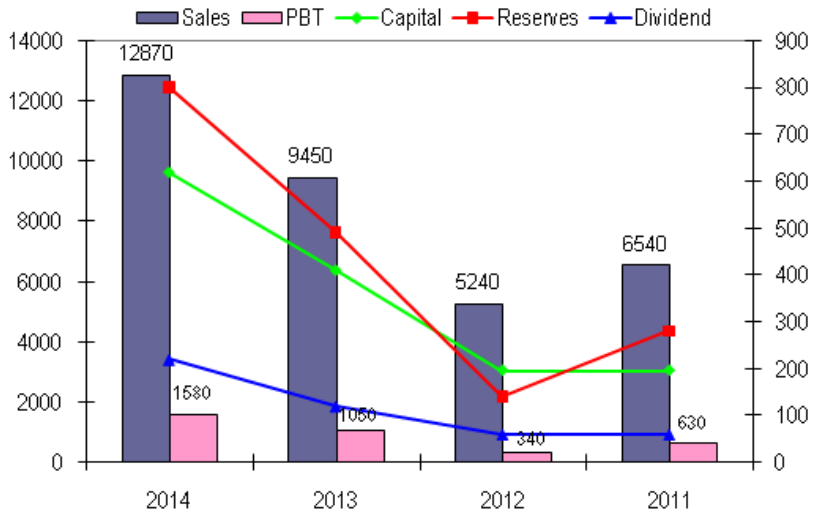
In which year was Sales as a percentage of Capital the lowest? (in numerical value)

A) 2014 B) C) D)

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

Question No. : 60

The bar graph below (left scale) shows information about the Sales and Profit Before Tax (PBT), while the line graph (right scale) shows information about the Capital, Reserves and Dividend of a company over four years from 2011 to 2014. All figures are in Rs. lakhs. Tax is paid as a percentage of PBT and part of the remaining amount is paid as Dividend and the rest is moved to Reserves.



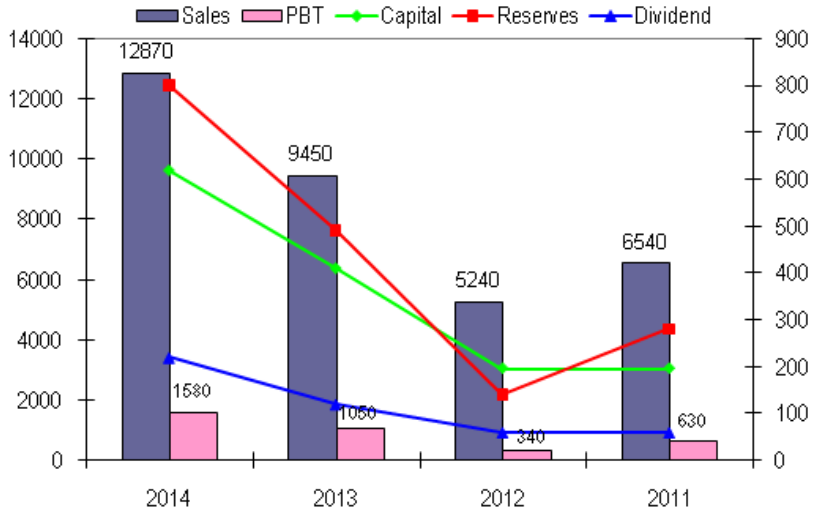
Reserve Ratio is defined as the ratio of the Reserves in a particular year to the Accumulated Reserves over all previous years. In which year from 2011 to 2014 was the Reserve Ratio the highest? (in numerical value)

A) 2013 B) C) D)

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

Question No. : 61

The bar graph below (left scale) shows information about the Sales and Profit Before Tax (PBT), while the line graph (right scale) shows information about the Capital, Reserves and Dividend of a company over four years from 2011 to 2014. All figures are in Rs. lakhs. Tax is paid as a percentage of PBT and part of the remaining amount is paid as Dividend and the rest is moved to Reserves.



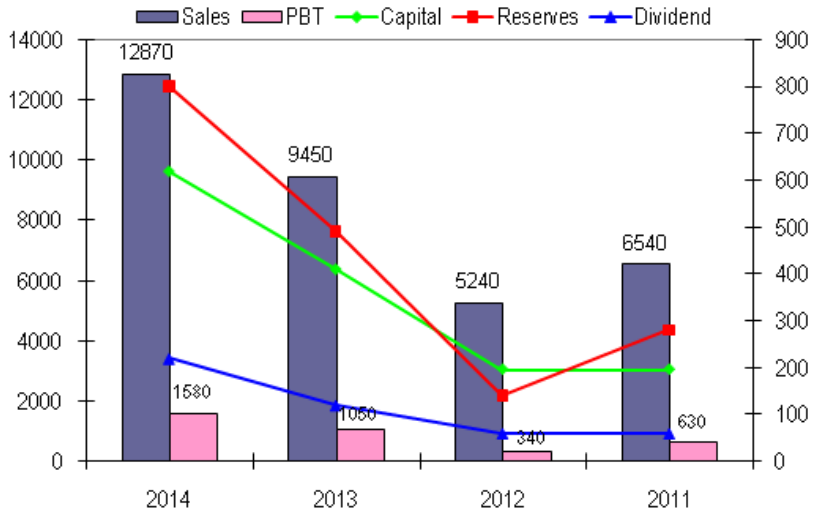
In which year was Tax as a percentage of Profit Before Tax the highest? (in numerical value)

A) 2011 B) C) D)

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

Question No. : 62

The bar graph below (left scale) shows information about the Sales and Profit Before Tax (PBT), while the line graph (right scale) shows information about the Capital, Reserves and Dividend of a company over four years from 2011 to 2014. All figures are in Rs. lakhs. Tax is paid as a percentage of PBT and part of the remaining amount is paid as Dividend and the rest is moved to Reserves.



In which year was the Profit Before Tax as a percentage of Sales the lowest? (in numerical value)

A) 2012 B) C) D)

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

Question No. : 63

In November, Charu would be working only five days a week – Mondays, Tuesdays, Wednesdays, Fridays and Saturdays. On each of these days, she will work in two shifts, the morning shift from 8:00 a.m. to 11:00 a.m. and the afternoon shift from 2:00 p.m. to 5:00 p.m. Each day, she will conduct exactly one session in the morning shift and exactly one session in the afternoon shift from amongst ACT, CAT, GMAT and SAT. When conducting these sessions, Charu must ensure that:

- She conducts CAT sessions in exactly three morning shifts.
- If she conducts a CAT session on Monday, she does not conduct a CAT session on Tuesday.
- She conducts ACT sessions in the afternoon shift on exactly two consecutive calendar days.
- She conducts GMAT sessions in exactly one morning shift and exactly three afternoon shifts.
- She conducts SAT sessions in exactly one morning shift.
- On Saturday, she neither conducts an ACT session nor conducts a CAT session.

Which of the following sessions could Charu conduct on Wednesday?

A) SAT session in the morning shift and CAT session in the afternoon shift
B) ACT session in the morning shift and GMAT session in the afternoon shift
C) CAT session in the morning shift and ACT session in the afternoon shift
D) CAT session in the morning shift and SAT session in the afternoon shift

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

Question No. : 64

In November, Charu would be working only five days a week – Mondays, Tuesdays, Wednesdays, Fridays and Saturdays. On each of these days, she will work in two shifts, the morning shift from 8:00 a.m. to 11:00 a.m. and the afternoon shift from 2:00 p.m. to 5:00 p.m. Each day, she will conduct exactly one session in the morning shift and exactly one session in the afternoon shift from amongst ACT, CAT, GMAT and SAT. When conducting these sessions, Charu must ensure that:

- She conducts CAT sessions in exactly three morning shifts.
- If she conducts a CAT session on Monday, she does not conduct a CAT session on Tuesday.
- She conducts ACT sessions in the afternoon shift on exactly two consecutive calendar days.
- She conducts GMAT sessions in exactly one morning shift and exactly three afternoon shifts.
- She conducts SAT sessions in exactly one morning shift.
- On Saturday, she neither conducts an ACT session nor conducts a CAT session.

If Charu conducts a CAT session on Tuesday, when could she schedule GMAT sessions?

A) Morning shift on Monday and Saturday and afternoon shift on Friday and Saturday
B) Morning shift on Wednesday and afternoon shift on Monday, Wednesday and Saturday
C) Morning shift on Wednesday and afternoon shift on Wednesday, Friday and Saturday
D) Morning shift on Monday and afternoon shift on Wednesday, Friday and Saturday

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

Question No. : 65

In November, Charu would be working only five days a week – Mondays, Tuesdays, Wednesdays, Fridays and Saturdays. On each of these days, she will work in two shifts, the morning shift from 8:00 a.m. to 11:00 a.m. and the afternoon shift from 2:00 p.m. to 5:00 p.m. Each day, she will conduct exactly one session in the morning shift and exactly one session in the afternoon shift from amongst ACT, CAT, GMAT and SAT. When conducting these sessions, Charu must ensure that:

- She conducts CAT sessions in exactly three morning shifts.
- If she conducts a CAT session on Monday, she does not conduct a CAT session on Tuesday.
- She conducts ACT sessions in the afternoon shift on exactly two consecutive calendar days.
- She conducts GMAT sessions in exactly one morning shift and exactly three afternoon shifts.
- She conducts SAT sessions in exactly one morning shift.
- On Saturday, she neither conducts an ACT session nor conducts a CAT session.

On which of the following pairs of days must Charu conduct GMAT sessions?

A) Monday and Saturday B) Tuesday and Friday C) Tuesday and Saturday D) Friday and Saturday

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

Question No. : 66

In November, Charu would be working only five days a week – Mondays, Tuesdays, Wednesdays, Fridays and Saturdays. On each of these days, she will work in two shifts, the morning shift from 8:00 a.m. to 11:00 a.m. and the afternoon shift from 2:00 p.m. to 5:00 p.m. Each day, she will conduct exactly one session in the morning shift and exactly one session in the afternoon shift from amongst ACT, CAT, GMAT and SAT. When conducting these sessions, Charu must ensure that:

- She conducts CAT sessions in exactly three morning shifts.
- If she conducts a CAT session on Monday, she does not conduct a CAT session on Tuesday.
- She conducts ACT sessions in the afternoon shift on exactly two consecutive calendar days.
- She conducts GMAT sessions in exactly one morning shift and exactly three afternoon shifts.
- She conducts SAT sessions in exactly one morning shift.
- On Saturday, she neither conducts an ACT session nor conducts a CAT session.

Which of the following statements is true? (write the correct option)

1. Charu conducts a SAT session on one of the days on which she conducts a GMAT session
2. Charu conducts an ACT session on one of the days on which she conducts a CAT session
3. Charu conducts a SAT session on one of the days on which she conducts an ACT session
4. All the above statements are true

A) 4 B) C) D)

Section : Quantitative Ability

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

Question No. : 67

Given that $\frac{1}{(2!7!)}+\frac{1}{(3!6!)}+\frac{1}{(4!5!)}+\frac{1}{(5!4!)}+\frac{1}{(6!3!)}+\frac{1}{(7!2!)}+\frac{1}{(8!1!)}+\frac{1}{(9!0!)}=\frac{N}{1!8!}$

Find the greatest integer that is less than $\frac{N}{100}$. (in numerical value)

A) 137 B) C) D)

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

Question No. : 68

Let $n > 6$ be an integer and $a_1; a_2; : : : ; a_k$ be all the natural numbers less than n and relatively prime to n. If $a_2 - a_1 = a_3 - a_2 = ... = a_k - a_{k-1} > 0$ then n must be

A) odd B) multiple of 3 C) prime D) None of these

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

Question No. : 69

10% of a vessel full of milk is drawn off and replaced with water. Then 10% of this mixture is drawn off and replaced with milk. 10% of the mixture is again drawn off and replaced with water. If the vessel now contains 199.1 litres of water, what is the volume of the vessel? (in litres)

A) 1100 B) C) D)

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

Question No. : 70

In Arun's opinion, his weight is greater than 65 kg but less than 72 kg. His brother does not agree with Arun and he thinks that Arun's weight is greater than 60 kg but less than 70 kg. His mother's view is that his weight cannot be greater than 68 kg. If all of them are correct in their estimation and if the weight is taken in whole numbers so that all the above conditions are satisfied, what is the average of different probable weights of Arun?

A) 66.5 kg B) 67 kg C) 68 kg D) Data inadequate

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

Question No. : 71

The terms of an arithmetic sequence add to 715. The first term of the sequence is increased by 1, the second term is increased by 3, the third term is increased by 5, and in general, the kth term is increased by the kth odd positive integer. The terms of the new sequence add to 836. What is the sum of the first, last, and middle terms of the original sequence? (in numerical value)

A) 195 B) C) D)

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

Question No. : 72

It is given that $\log_6 a + \log_6 b + \log_6 c = 6$, where a, b, and c are positive integers that form an increasing geometric sequence and (b – a) is the square of an integer. Find a + b + c. (in numerical value)

A) 111 B) C) D)

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

Question No. : 73

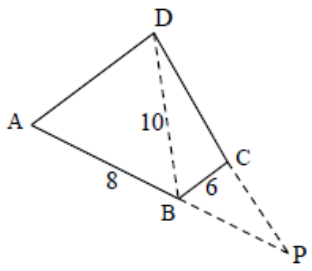
Ankita sold an article to Bhavna at 30 % profit. Bhavna in turn sold it to Harsha at 20 % profit. Harsha sold it to Tapsi at 20 % loss and Tapsi sold it to Jatin at 10% loss. By what percentage was Jatin's cost price more/less than Ankita's cost price?

A) 12.32 % less B) 12.32 % more C) 6.16 % less D) 6.16 % more

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

Question No. : 74

In quadrilateral ABCD, ∠BAD = ∠ADC and ∠ABD = ∠BCD, AB = 8, BD = 10, and BC = 6. If the length of CD may be written in the reduced form m/n, what is the value of m + n? (in numerical value)



A) 69 B) C) D)

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

Question No. : 75

A right circular cone has base radius r and height h. The cone lies on its side on a table. As the cone rolls on the surface of the table without slipping, the point where the cone's base meets the table traces a circular arc centered at the point where the vertex touches the table. The cone first returns to its original position on the table after making 17 complete rotations. What is the value of the ratio h/r?

A) 14 B) 12√2 C) 34 D) 41

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

Question No. : 76

If $2x^2 - 6x + 6 > x^2 + 2x - 9$, which of the following represents a range for x where this inequality must hold true? (write the correct option)

1. (1, 5) 2. (5, ∞) 3. (3, 5) 4. (3, ∞)

A) 2 B) C) D)

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

Question No. : 77

A water tank is in the shape of an inverted right circular cone. The tank is standing on horizontal ground on its vertex. The axis of the conical tank is perpendicular to the horizontal surface of ground. The height of the tank is 6 m. The tank is completely filled with water and the volume of the water is 216 liters. There are three outlet taps, one at the bottom, second at a height of 2 m and third at a height of 4m. The rate of outflow of each of the three taps is 2 liters/minute. If all the three taps are opened simultaneously at 2:00 pm, at what approximate time will the tank get completely empty?

A) 2:10 pm B) 2:32 pm C) 2: 44 pm D) 2: 19 pm

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

Question No. : 78

The sum of the squares of three positive integers a, b and c is also a perfect square. Which of the following cannot be the value of $a^2 + b^2 + c^2$?

A) 15625 B) 28561 C) 33049 D) 10000

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

Question No. : 79

Viraaj and Siraaj started travelling towards each other from their home towns Delhi and Jammu respectively by car at uniform speeds. They met at a point X in between. They exchanged their cars (in practically no time) and returned back towards their respective home towns. On reaching their home towns they at once started travelling back towards each other and met at a point Y this time. What was the ratio of their speeds such that the distance XY is the highest, if they don't meet anywhere before reaching their respective home towns?

A) 2:5 B) 1:2 C) 2:3 D) 5:6

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

Question No. : 80

In a plane there are 300 seats. The price of each ticket when the plane is full is Rs. 60. For every Rs. 5 increase in the ticket, the number of tickets sold goes down by 10. Find the price of ticket for which the plane's owner earns the maximum revenue.

A) 95 B) 100 C) 105 D) 110

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

Question No. : 81

If a and b are real numbers such that one of the roots of the equation $x^{12} - abx + a^2 = 0$ is greater than 2, then |b| is _____ (write the correct option)

1. < 16 2. < 32 3. ≥ 64 4. < 64

A) 3 B) C) D)

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

Question No. : 82

Aditya thinks of a two-digit number, which is equal to the sum of the squares of its digits. What is the sum of the digits of that number?

A) 7 B) 5 C) 6 D) Such a number is not possible

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

Question No. : 83

Find the number of ways of dealing n cards to two persons (n ≥ 2 and is odd), where the persons may receive unequal (positive) number of cards disregarding the order in which the cards are received.

A) 2^n B) $2^n - 1$ C) $2^n - 2$ D) $2^n - 3$

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

Question No. : 84

If $x^5 - x^3 + x = a$, which of the following is true? (write the correct option)

1. $x^6 > 2a$ 2. $x^6 \le 2a$ 3. $x^6 \ge 2a - 1$ 4. $x^6 = 2a + 1$

A) 3 B) C) D)

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

Question No. : 85

Consider A = {1, 11, 21, 31, ..., 551}. A subset S of A is defined so that the sum of any two elements of S is not more than 552. What is the maximum number of elements that are contained in S? (in numerical value)

A) 29 B) C) D)

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

Question No. : 86

Find the last two digits of 2^{324} ? (in numerical value)

A) 16 B) C) D)

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

Question No. : 87

Train A, travelling at 60 km/hr, leaves Mumbai for Delhi at 6 P.M. Train B, travelling at 90 km/hr, also leaves Mumbai for Delhi at 9 P.M. Train C leaves Delhi for Mumbai at 9 P.M. If all three trains meet at the same time between Mumbai and Delhi, what is the speed of Train C, if the distance between Delhi and Mumbai is 1260 km? (ans in kmph)

A) 120 B) C) D)

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

Question No. : 88

36 men can reap a field in 22 days working 9 hrs a day. In how many days would 18 women do the same work, working 8 hrs a day, if 4 women do as much work as 3 men? (in days)

A) 66 B) C) D)

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

Question No. : 89

In 1997, the fourth day after Gandhi Jayanti (2^{nd} October) was Monday. In that month all of the days below occurred 5 times, except

A) Tuesday B) Wednesday C) Thursday D) Friday

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

Question No. : 90

What is the value of $\sqrt{10^{\left[2+\frac{1}{2}\log_{10}16\right]}}$?

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

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

Question No. : 91

What is the remainder when 19^{92} is divided by 92? (in numerical value)

A) 49 B) C) D)

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

Question No. : 92

A square has two of its vertices at (–1, –1) and (4, 2). What is the area of the square?

A) 34 B) 43 C) 17 D) Cannot be determined

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

Question No. : 93

Two functions, $f(x)$ and $g(x)$, are defined for all non-negative x as $f(x) = |6 - x|$ and $g(x) = ½\ x$. The graphs of $f(x)$ and $g(x)$ intersect in the points A and B. Which of the following represents the equation of AB and the coordinates of the mid-point of AB respectively?

A) $x = 2y$, (12, 4) B) $x - 2y = 0$, (8, 4) C) $4x + 8y - 16 = 0$, (2, 2) D) $x - 2y - 4 = 0$, (2, 6)

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

Question No. : 94

For real numbers a and b, $f(a, b) = ½\ (a + b) + ½\ |a - b|$. If $a_n = 1 - 2 + 3 + \ldots + n(-1)^{n-1}$, what is the value of $f(a_1, f(a_2, f(a_3, a_4)))$?

A) 2 B) -1 C) 4 D) 6

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

Question No. : 95

What is the value of a if $x^2 - 4x + 3$ is a factor of $x^3 + (a - 4)x^2 + (3 - 4a)x + 3$? (in numerical value)

A) 1 B) C) D)

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

Question No. : 96

An isosceles trapezium is inscribed in a circle of radius 10 cm so that the non-parallel sides are 10 cm each. What is the area of the trapezium if one of its sides is the diameter of the circle?

A) $100\sqrt{2}\ \text{cm}^2$ B) $50\sqrt{3}\ \text{cm}^2$ C) $75\sqrt{3}\ \text{cm}^2$ D) $25\sqrt{2}\ \text{cm}^2$

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

Question No. : 97

A trades man charges 20% above cost price. He then allows a discount of 10%. After the whole trasaction what will be his gain% or loss%?

A) 12% loss B) 10% gain C) 8% gain D) None of these

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

Question No. : 98

Two equal sums were borrowed at 8% simple interest per annum for 2 years and 3 years respectively. The difference in the interest was Rs. 56. The sums borrowed were (in Rs.)

A) 700 B) C) D)

DIRECTIONS for the question: *Mark the best option:*

Question No. : 99

In a rectangle of size 7 cm by 14 cm, quarter circles of radius 7 cm are drawn at each of the 4 vertices. What is the area of the rectangle which is not covered by any of the circles (in cm^2)?

A) 2.17 B) 6.73 C) 4.76 D) 12.44

DIRECTINOS for the question: *Mark the best option:*
Question No. : 100

An aquarium and a fountain of circular shapes are built in a circular park of diameter 12 metres. The fountain and aquarium are tangential to each other and also tangential to the circular park. The area of the park outside the aquarium and fountain is 4/9 of the area of the circular park. What is the difference between the radii of the fountain and the aquarium, if it is known that their radii are integers?

A) 6 B) 0 C) 2 D) 4