

Directions of Test

Test Name	2016 Bull CAT 06	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

In 2005, the University of Chicago Library held an exhibition entitled *Book Use, Book Theory: 1500-1700*. Its curators, Bradin Cormack and Carla Mazzio, displayed various books from the library's collection that sought to reveal the agency and character of early modern readers by way of the marginalia, marks, lists, and doodles left behind within the blank spaces of the texts themselves. They used the motto of Geoffrey Whitney's *Choice of Emblemes* (1586), the very first English emblem book, as a sort of speculative opening; *Ususlibri, non lectioprudentesfacit*. Roughly: "Using a book, not reading it, makes us wise."

This, it seems to me, is a quietly remarkable phrase, one whose dichotomy may strike the modern reader as curious. After all, is not reading a book "using" it, in the most fundamental sense? A couplet from the emblem's accompanying poem may clarify Whitney's meaning:

First reade, then marke, then practise that is good,
For without vse, we drink but LETHE flood.

Mere reading, he says, is not enough; rather, we must mark our texts lest we forget the wisdom so recently acquired. Inscription is a critical part of "use." Far from being passive, readers, in their act of marking — a conscious deciding to remember — become participants in a historical body of understanding. Cormack and Mazzio argue that this places readers "at the center of a cultural process of book use that secures the continuity of knowledge."

This is the provenance of Stephen Orgel's *The Reader in the Book: A Study of Spaces and Traces*. Orgel, a professor in the Humanities Department at Stanford, has written what he calls "a book about individual acts of reading"; while this is strictly accurate, it also undersells this brisk, varied, and often fascinating study, one that engages with, among other things, the materiality of reading early modern psychology and 16th-century book graffiti (more on "graffiti" later). The thrust of the work is that "the history of any particular book does not conclude with its publication." Over five in-depth studies, including an investigation of a school boy's 500-year-old Latin grammar book and a deep dive into a bold countess's library and letters, he conducts a kind of archaeology of margins, gleaning sociological insight and human depth from the calcified life at the edge of the text, cases in which "reading constitutes an active and sometimes adversarial engagement with the book." This interrogation of textual space, presented in blessedly jargon-free prose, constitutes a significant contribution to the study and interpretation of contemporary responses to now-classic texts, while also placing us squarely in the midst of that most mysterious element: the opaque substance of the reading mind.

The manifestation of this fragmentary, spectral presence is likely to surprise readers whose familiarity with marginalia begins and ends with checkmarks and interpretive gloss; indeed, a great deal of 16th- and 17th-century marginalia has nothing whatsoever to do with the text it is written in.

Orgel believes these marks constitute a kind of graffiti, albeit one stripped of its transgressive connotations. He argues this graffiti

reveals a material dimension (and a material value) of old books that has been lost to time: that is, the bound object as not merely text but also “a place and a property”, a locus of particular ownership benefitting from incremental enhancement.

According to the information given in the passage, the phrase 'adversarial engagement with the book' will stand for which of the following interpretations?

- A) engaging a book presents a challenge in itself B) engaging with a book does not mean that you learn from the book
C) engaging with a book can lead to disagreement with the given content D) reading a book is not a passive exercise

Question No. : 2

According to the author of the passage:

- A) the mind of a reader can be clearly understood by the graffiti he scribbles on book margins
B) the mind of a reader cannot be understood from the inscriptions in the margins
C) the mind of a reader is not something which is necessarily open to precise understanding D) both (a) and (c)

Question No. : 3

According to Orgel:

- I. books served the purpose of supplying information to the text.
II. books carried an intrinsic material values in themselves, which is often forgotten.
III. publication is not the be-all and end-all of books.

- A) I & II B) II & III C) I & III D) All of these

Question No. : 4

According to Geoffrey Whitney:

- A) The act of marking in a book mentally liberates a reader B) The act of marking in a book acts like a post-it for the reader
C) The act of marking in a book is a superficial act of posterity D) Both (A) and (B)

Question No. : 5

For the given usage in the second paragraph, the word 'dichotomy' means:

- A) contrast B) divorce C) gulf D) split

Question No. : 6

The primary purpose of the author of the passage is:

- A) To highlight an inconsistency that has dogged a certain interpretation for long
B) To highlight an alternate way of interpreting a certain action that has been viewed from a traditional lens so far
C) To provide additional evidence for a certain academic viewpoint that has existed for long
D) To highlight the use the of an additional argument that helps clear a certain ambiguity

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

Question No. : 7

One of the most curious sub-plots on Referendum day was what quickly, and predictably, became known on social media as “pen-gate”. Groups of Brexit campaigners started to hand out pens in polling stations to replace the government-issued pencils with which voters are usually asked to make their cross. Their worry was that, somewhere along the electoral line, a pencil cross in the “Leave” box could easily be erased by those working on behalf of “the establishment”, and replaced with a vote for “Remain”. Police were apparently called to one polling station to investigate the potentially disruptive distribution of alternative voting instruments.

There is a tiny glimpse here of the edgy anxieties of Western democracy. It seems inconceivable to most of us that “our” leaders should stoop to the tactics of the world’s worst pseudo-democratic dictators who would go to almost any lengths, the less

ingenious the better, to claim a popular mandate (and, for what it is worth, in my view it is inconceivable). Yet, at the same time, it is hard entirely to banish the suspicion that our own complacency could actually be blinding us to what those in power might be doing to get their way. There is also a very long pedigree to these anxieties about how far you can trust what the voters are supposed to have written on their ballot papers. Electoral fraud of that kind is as old as democracy itself, and was an issue even in the famous ancient Athenian institution of "ostracism" – usually taken to be a canny system of keeping the elite in check, and a far more radical deployment of popular power than any modern referendum.

Modern historians have found in ostracism one of the most appealing inventions of fifth-century BC politics. It involved the Athenian citizens getting together and deciding which politician they wanted to get rid of from their city, into honourable exile, for ten years. Each man wrote the name of his chosen victim on a little piece of broken pottery (an ostrakon, hence "ostracism"), chucked it into a voting urn – and, with a few safeguards such as a quorum of 6,000, whoever got the most votes was sent away. It is not surprising that ostracism has become such a modern favourite. "Just imagine", so the argument goes, "being able to get rid of some loud mouth politician you didn't like, simply by voting him out . . .". Boris Johnson has been a particularly enthusiastic supporter, seemingly unaware of his own vulnerability: "That was people power", he once said; it only needed enough citizens to show up and vote, and "kerpow, you were spending the next ten years twiddling your thumbs in Bulgaria Imagine the exhilaration of catapulting someone off like that".

The system was not, in fact, quite so straightforward – nor was it quite so clear who was behind the catapulting. One of the most curious archaeological finds of the last century was a cache of 190 ostraka, with the name of Themistokles (who was ostracized in 472 BC) scratched on each one, in just fourteen different hands. It does not take much imagination to see what must have been going on: an ancient plot not so very far from what the pen-gate Brexiters suspected. Some of Themistokles' powerful enemies presumably prepared a huge pile of ready-inscribed ostraka (the 190 are only the left-overs) and handed them out to the mostly illiterate voters, maybe even disguising whose name was actually on the ostraka. You can get away with a lot if the electorate can't read: it was more popular manipulation than popular power.

A different version of manipulation put an end to the whole system. Despite its modern fame, ostracism only lasted about seventy years and fewer than fifteen people were ever sent into exile this way. The last was an unlucky character, who is supposed to have been the victim of a stitch-up in 416 BC – when two rival establishment figures, Nicias and Alkibiades, both major candidates for exile, decided to do a deal and get their own supporters to turn their votes against a third party, by the name of Hyperbolos. It was he who was sent away, while the intended targets escaped scot-free. No one could have failed to spot what had gone on. And the glaring exposure of establishment control and of their self-interested trade-off destroyed any myth of people power. Ostracism was never used again.

The example of Hyperbolos showcases:

- A) failing of a certain system B) power of a certain methodology C) prejudice of a certain method
D) sanity in a certain measure

Question No. : 8

In the given context of the passage, ostracism refers to:

- I. exile II. expulsion
III. cold-shouldering IV. blackballing
A) I, II & III B) II, III & IV C) I, II & IV D) All of the above

Question No. : 9

The author of the passage seems to raise which one of the following questions in the passage?

- A) Manipulation to the masses? B) Democracy to the doers? C) Franchise for disenfranchised? D) Power to the people?

Question No. : 10

It can be inferred from the passage that:

- A) Boris Johnson is a particularly popular politician B) Boris Johnson is not a politician who is appreciated by all
C) Boris Johnson does not truly understand the Athenian institution of "ostracism" D) None of the above

Question No. : 11

Identify the apt option as per the information given in the passage.

- A) There are nations where rulers make a sham out of democratic processes.
B) Electoral fraud is not uncommon in democracies. C) Both (A) and (B) D) Neither (A) nor (B)

Question No. : 12

It can be inferred from the passage that "the establishment" was:

- A) pro-leave B) pro-remain C) impartial and honest D) unfair and manipulative

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

Question No. : 13

How should we treat science's growing pains?

There is no lack of initiatives to tackle science's crisis in all its aspects, from reproducibility to the abuse of metrics, to the problems of peer review. This gives good grounds for hope that the crisis will eventually be resolved, and that it will not become a general crisis of trust in science. Should that occur, and 'science' ceases to be a key cultural symbol of both truth and probity, along with material beneficence, then the consequences could be far-reaching. To that end, we should consider what lies behind the malpractices whose exposure has triggered the crisis over the last decade.

It is clear that a combination of circumstances can go far to explain what has gone wrong. Systems of controls and rewards that had evolved under earlier conditions have in many ways become counterproductive, producing perverse incentives that become increasingly difficult for scientists to withstand. Our present problems can be explained partly by the transformation from the 'little science' of the past to the 'big science' or 'industrialised science' of the present. But this explanation raises a problem: if the corrupting pressures are the result of the structural conditions of contemporary science, can they be nullified in the absence of a significant change in those conditions?

We should explore how these new conditions lead to these new pressures. There are two familiar qualitative aspects of the steady quantitative growth of the scientific enterprise. The first is the loss of 'Gemeinschaft', where all communities and sub-communities have become so large that personal acquaintance no longer dominates in the professional relationships. The old informal systems of rewards and sanctions are no longer effective. Under the new 'Gesellschaft' conditions, such intimate tasks of governance must be made 'objective'. Ironically, applying a 'scientific' methodology to the tasks of governance of science leads directly to corruption, since any such system can be gamed. Allied to that development is a second one, the hugely increased capital-intensity of science, so that the typical context of discovery is no longer the scientist with his test-tube, but a large lab with division of labour on an industrial scale. In the absence of the discipline of customers for a product (however corrupted that might be), there is nothing to ensure quality control except those informal systems that are already obsolete.

Just as this new system was becoming dominant, by a cruel accident of fate a third element has intruded: stasis. The social subsystem of science whereby it reproduces itself, namely the training and certification of postgraduates, depends on the possibility of recruitment of at least a significant minority. This will necessarily be small, as even the traditional steady growth rate of science allows only a few new recruits in the course of a scientist's career.

But when even that prospect vanishes, recruitment stalls, and the existing corps of researchers is squeezed, many pathologies inevitably ensue. The obvious one is the proletarianisation of research work. Recruits (and teachers) face the prospect of a lifetime sequence of short-term jobs on contracts, lacking any rights of security and whose renewal depends on the favour of the principal investigator. Maintaining the lofty ideals of independence and integrity becomes increasingly difficult.

Under these harsh conditions, quality becomes instrumentalised. To strive for 'excellence' may be impractical; 'impact' is the name of the game. The self-sacrificing quest for scientific rigour is displaced by the need to jockey among journals, and perhaps also engage in p-hacking to obtain interesting results. But there is a deeper cause at work. Perhaps those who engage in what we might call 'shoddy science' or even 'sleazy science' don't even know that it is sub-standard. The problem may have been building up for decades in the past, when standards gradually slipped and the basic skills of rigorous scientific work were allowed to atrophy. As evidence we have the current state of statistical practice, of which the best is as sophisticated and self-critical as possible, but where there is also much that is an insult.

In the given context, the word 'jockey' means:

- A) Someone employed to ride horses in horse races B) Struggle by every available means to achieve something
C) An operator of some vehicle, machine or apparatus D) Handle or manipulate (someone or something) in a skilful manner

Question No. : 14

When the author says 'Should that occur' in the first paragraph, he is referring to:

- A) how the crises in science will be eventually resolved B) how a general crises of trust in science can come to fruition
C) how a general crises of trust in science will be averted D) none of the above

Question No. : 15

According to the author of the passage:

- I. The current system of controls and rewards have been manipulated by scientists.
II. Non-personal and bias-free methods of control have actually lead to counter-productive outcomes.
III. Science, being driven by capital intensive and industrial scale operations, does not have the checks and balances required for scientific probity.

- A) I & II B) II & III C) I & III D) All of the above

Question No. : 16

What does the author mean by the phrase 'proletarianisation of research work'?

- A) researchers lose control over the freedom of their work choices and are bound by the choices of their employers.
B) researchers are bound to job roles and conditions they may not necessarily opt for voluntarily. C) both (a) and (b)
D) neither (a) nor (b)

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Question No. : 17

In 2005, the University of Chicago Library held an exhibition entitled *Book Use, Book Theory: 1500-1700*. Its curators, Bradin Cormack and Carla Mazzio, displayed various books from the library's collection that sought to reveal the agency and character of early modern readers by way of the marginalia, marks, lists, and doodles left behind within the blank spaces of the texts themselves. They used the motto of Geoffrey Whitney's *Choice of Emblemes* (1586), the very first English emblem book, as a sort of speculative opening: *Ususlibri, non lectioprudentesfacit*. Roughly: "Using a book, not reading it, makes us wise."

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The author of the passage can be said to be:

A) demanding sincere action B) fair introspection C) highlight obvious doubts D) figuring out a complex conundrum

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Question No. : 18

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It is clear that a combination of circumstances can go far to explain what has gone wrong. Systems of controls and rewards that had evolved under earlier conditions have in many ways become counterproductive, producing perverse incentives that become increasingly difficult for scientists to withstand. Our present problems can be explained partly by the transformation from the 'little science' of the past to the 'big science' or 'industrialised science' of the present. But this explanation raises a problem: if the corrupting pressures are the result of the structural conditions of contemporary science, can they be nullified in the absence of a significant change in those conditions?

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But when even that prospect vanishes, recruitment stalls, and the existing corps of researchers is squeezed, many pathologies inevitably ensue. The obvious one is the proletarianisation of research work. Recruits (and teachers) face the prospect of a lifetime sequence of short-term jobs on contracts, lacking any rights of security and whose renewal depends on the favour of the principal investigator. Maintaining the lofty ideals of independence and integrity becomes increasingly difficult.

Under these harsh conditions, quality becomes instrumentalised. To strive for 'excellence' may be impractical; 'impact' is the name of the game. The self-sacrificing quest for scientific rigour is displaced by the need to jockey among journals, and perhaps also engage in p-hacking to obtain interesting results. But there is a deeper cause at work. Perhaps those who engage in what we might call 'shoddy science' or even 'sleazy science' don't even know that it is sub-standard. The problem may have been building up for decades in the past, when standards gradually slipped and the basic skills of rigorous scientific work were allowed to atrophy. As evidence we have the current state of statistical practice, of which the best is as sophisticated and self-critical as

possible, but where there is also much that is an insult.

In the given context, the phrase 'p-hacking' means:

- A) Discovery of statistics such that the desired outcome assumes "statistical significance", usually for the benefit of the study's sponsors.
- B) Creation of statistics such that the desired outcome assumes "statistical significance", usually for the benefit of the study's researchers.
- C) Corroboration of statistics such that the desired outcome assumes "statistical significance", usually for the benefit of the study's researchers.
- D) Manipulation of statistics such that the desired outcome assumes "statistical significance", usually for the benefit of the study's sponsors.

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

Question No. : 19

The radio and telephone technologies on which cellular systems are based each claim a distinct commercial and engineering tradition, and the segment of the radio industry from which cellular derives is even more distinct. The radios were produced by large, sophisticated companies that specialized in radio technology. The customers were a multitude of small, dispersed organizations for whom the radio was an accessory to their mission rather than a central component. Radio engineers had a reputation in the industry as cowboys: their knowledge was empirical, ad hoc, hands-on. They jiggled the system in the field until it worked. Signal quality was often indifferent, fading in and out and none of this seemed to bother the end users. Telephone equipment producers were also large and technically sophisticated, but the customers for their equipment were large and sophisticated companies too. In the telephone equipment industry, quality was an obsession.

The companies that pioneered cellular typically came from either the radio or the telephone side of the business. AT & T was a telephone company. Motorola and Matsushita were radio companies. Each faced the major challenge of finding a partner who understood the other side of the technology and then learning to work intimately with that partner to create the new product. Not an easy task. The cultural differences between radio and telephone engineering were deep-rooted.

Blue Jeans

The centerpiece of the blue jeans case study was Levi Strauss and Co., which started out as a manufacturer of workmen's blue jeans. "Levi's" remains the company's defining product. In the United States, blue jeans are the standard work clothing. They are produced in very large volume and have been sold in a limited number of standard cuts and styles since they were first introduced by Levi Strauss in San Francisco in 1873. Levi's are the prototypical commodity of American mass consumption, the Model T of the garment industry. Clothing production is notoriously difficult to mechanize, but the cutting and assembly of jeans is as close to assembly-line production as can be found in the outer garment industry.

Historically, blue jeans have had very little fashion content. This changed dramatically in the early 1970s, propelled by the sudden popularity of American-made jeans in Europe. Levi Strauss moved to take advantage of this trend by selling its Levi's products abroad for two and three times the retail price they commanded in the United States. The spread between European prices and costs created enormous profits that attracted local producers into the industry. To compete with the cachet of American-made jeans, these new entrants sought to stylize their garments, differentiating the product through new cuts, finishes, and variations upon the standard dark-blue denim. These fashions were then imported into the United States in the early 1980s, invading Levi's home market. Levi Strauss was forced to defend its brand by adopting many of the European fashions and, ultimately, to preempt the Europeans by introducing innovations of its own.

The focus in blue jeans fashion, almost from the beginning and certainly in recent years, has been the finishing process and the way this affects the look and "hand," or feel, of the garment. The basic technology involves laundering the garment to soften the texture of the fabric. The finished garment is typically abraded as well. The standard abrading technique is to wash the jeans with "stones" or pumice. There is continual experimentation with new techniques, both to produce effects already achieved in other ways and to create new effects. In the pursuit of a fashion edge, manufacturers expend as much as 80 percent of the life of the garment during the finishing process.

These new finishing techniques have led to a cascade of changes in cooperating industries. Textiles have been redesigned to better withstand the extensive abrasion. Washing machines have been redesigned to survive the abuse of stone washing. Continuing changes in raw materials and equipment have the incidental effect of subtle and not so subtle changes in the look and feel of the finished garment; this in turn becomes a new fashion element.

Thus, the conversion of Levi Strauss from a manufacturing company to a fashion house involved crossing the boundaries that separated manufacturing from style and design and from the previously distinct industries of textiles, laundering and finishing, and washing machines. In many ways the cultures of these industries *were* as different as the cultures of telephone and radio. Levi's old garment-assembly operations and the design and manufacture of washing machines were highly structured and engineered, although based of course on quite different technologies. Both style and finishing tended to be much more free-wheeling, ad hoc, intuitive, or empirical, although the kind of intuition involved in producing new finishing effects was very different from the intuition involved in fashion.

What is the main idea conveyed in the passage?

- A) The passage suggests that historical transformation of the jeans from a commodity of mass consumption to a product of fashion statement.
- B) Cultural differences between radio and telephone equipment industries posed challenges to establishing an effective partnership between them.
- C) Companies with different cultural environments technologies and practices can create meaningful synergies by understanding each other's requirements and competencies.
- D) Cellular companies and blue jeans companies are not able to change and develop with time due to lack of cooperation among their respective cooperating industries.

Question No. : 20

Which of the following is not false as per context of the passage?

- A) Use of jeans as a fashion product by introduction newer styles originated in America during later half of the 20th century.
- B) Requirements of introducing desired changes in blue jeans look or feel subsequently resulted in changes in various cooperating industries.
- C) Finishing enhanced durability of a garment as compared to a non- finished product.
- D) Levi Strauss & co. initially manufactured jeans for influential classes only which later on became a commodity of mass consumption.

Question No. : 21

Which of the following statement is in consonance with the idea of model "T" mentioned in the passage?

- A) Jeans were quite affordable due to large scale production and hence became very popular among the masses.
- B) The production of the jeans was difficult to mechanize and hence it resulted in costlier products for the masses.
- C) Jeans were produced incorporating a large number of cuts and styles which made it popular.
- D) Jeans were popular among the elite classes rather than the masses.

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

Question No. : 22

The tale of reading begins when the retina receives photons reflected off the written page. But the retina is not a homogeneous sensor. Only its central part, called the fovea, is dense in high-resolution cells sensitive to incoming light, while the rest of the retina has a coarser resolution. The fovea, which occupies about 15 degrees of the visual field, is the only part of the retina that is genuinely useful for reading. When foveal information is lacking, whether due to a retinal lesion, to a stroke having destroyed the central part of the visual cortex, or to an experimental trick that selectively blocks visual inputs to the fovea, reading becomes impossible."

The need to bring words into the fovea explains why our eyes are in constant motion when we read. By orienting our gaze, we "scan" text with the most sensitive part of our vision, the only one that has the resolution needed to determine letters. However, our eyes do not travel continuously across the page.' Quite the opposite: they move in small steps called saccades. At this very moment, you are making four or five of these jerky movements every second, in order to bring new information to your fovea. Even within the fovea, visual information is not represented with the same precision at all points. In the retina as well as in the subsequent visual relays of the thalamus and of the cortex, the number of cells allocated to a given portion of the visual scene decreases progressively as one moves away from the center of gaze. This causes a gradual loss of visual precision. Visual accuracy is optimal at the center and smoothly decreases toward the periphery. We have the illusion of seeing the whole scene in front of us with the same fixed accuracy, as if it were filmed by a digital camera with a homogeneous array of pixels. However, unlike the

camera, our eye sensor accurately perceives only the precise point where our gaze happens to land. The surroundings are lost in an increasingly hazy blurriness

One might think that, under these conditions, it is the absolute size of printed characters that determines the ease with which we can read: small letters should be harder to read than larger ones. Oddly enough, however, this is not the case. The reason is that the larger the characters, the more room they use on the retina. When a whole word is printed in larger letters, it moves into the periphery of the retina, where even large letters are hard to discern. The two factors compensate for each other almost exactly, so that an enormous word and a minuscule one are essentially equivalent from the point of view of retinal precision. Of course, this is only true provided that the size of the characters remains larger than an absolute minimum, which corresponds to the maximal precision attained at the center of our fovea. When visual acuity is diminished, for instance in aging patients, it is quite logical to recommend books in large print. Our eyes impose a lot of constraints on the act of reading. The structure of our visual sensors forces us to scan the page by jerking our eyes around every two or three tenths of a second. Reading is nothing but the word-by-word mental restitution of a text through a series of snapshots. 'file some small grammatical words like "the," "it" or "is" can sometimes be skipped, almost all content words such as nouns and verbs have to be fixated at least once.

These constraints are an integral part of our visual apparatus and cannot be lifted by training. One can certainly teach people to optimize their eye movement's patterns, but most good readers, who read four hundred words per minute, are already close to optimal. Given the retinal sensor at our disposal, it is probably not possible to do much better. A simple demonstration proves that eye movements are the rate-limiting step in reading. If a full sentence is presented, word by word, at the precise point where gaze is focalized, thus avoiding the need for eye movements, a good reader can read five hundred words per minute at staggering speed—a mean of eight hundred words per minute, and up to sixteen hundred words per minute for the best readers, is about one word every forty milliseconds and three to four times faster than normal reading! With this method, called rapid sequential visual presentation, or RSVP, identification and comprehension remain satisfactory, thus suggesting that the duration of those central steps does not impose a strong constraint on normal reading. Perhaps this computerized presentation mode represents the future of reading in a world where screens progressively replace paper.

At any rate, as long as text is presented in pages and lines, acquisition through gaze will slow reading and impose an unavoidable limitation. Thus, fast reading methods that advertise gains in reading speed of up to one thousand words per minute or more must be viewed with skepticism. One can no doubt broaden one's visual span somewhat, in order to reduce the number of saccades per line, and it is also possible to learn to avoid moments of regression, where gaze backtracks to the words it has just read. However, the physical limits of the eyes cannot be overcome, unless one is willing to skip words and thus run the risk of a misunderstanding. Woody Allen described this situation perfectly: "I took a speed-reading course and was able to read *War and Peace* in twenty minutes. It involves Russia."

Why does the author recommend books in larger print for old people?

- A) A larger word occupies more space on retina and thus easily visualized.
- B) A larger word and smaller word are equivalent from point of view of retinal precision.
- C) The absolute minimum size of characters, to be able to be seen, is more in old people due to lower ocular sharpness.
- D) In old people the fovea has higher resolution cells requiring larger letters.

Question No. : 23

What can be inferred regarding the evolution of reading in the coming times?

- A) Readers will be able to read more in less time by reducing the number of saccades per line and in the process, they will generally not experience any loss of comprehension.
- B) Reading will be more effective in future because a reader can read at a staggering speed with the help of rapid sequential visual presentation method.
- C) Reading speed may increase due to computerized presentation involving fixing of gaze and obviating the need for eye movement.
- D) Readers will be able to read fast by overcoming the physical limitation of eyes.

Question No. : 24

According to the passage, which of the following option(s) determines the rate of reading?

- (i) Our perceptual abilities which exclusively depend on the number of letters in the words not space these words occupy on our retina.
- (ii) The requirement of moving the gaze across the page.

- (iii) Twitching of our eyes while reading the text.
(iv) The requirement of maintaining a fixed gaze on the page without any eye movement.

A) Both (ii) and (iv) B) Both (i) and (ii) C) Both (ii) and (iii) D) Option (i), (ii) and (iii)

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. : 25

1. There is general relativity, which beautifully accounts for gravity and all of the things it dominates: orbiting planets, colliding galaxies, the dynamics of the expanding universe as a whole. That's big.
2. The conflict between the two halves of physics has been brewing for more than a century—sparked by a pair of 1905 papers by Einstein, one outlining relativity and the other introducing the quantum—but recently it has entered an intriguing, unpredictable new phase.
3. At present physicists have two separate rulebooks explaining how nature works.
4. Then there is quantum mechanics, which handles the other three forces—electromagnetism and the two nuclear forces. Quantum theory is extremely adept at describing what happens when a uranium atom decays, or when individual particles of light hit a solar cell. That's small.

(in numerical value)

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. : 26

1. This is probably the first time in history that young readers themselves are demanding protection from the disturbing content of their course texts, yet reading has been seen as a threat to mental health for thousands of years.
2. Some contend that Virginia Woolf's novel *Mrs Dalloway* (1925), in which a suicide has taken place, could trigger suicidal thoughts among those disposed to self-harm.
3. At universities around the world, students are claiming that reading books can unsettle them to the point of becoming depressed, traumatised or even suicidal.
4. Others insist that F Scott Fitzgerald's *The Great Gatsby* (1925), with its undercurrent of spousal violence, might trigger painful memories of domestic abuse.

(in numerical value)

A) 1 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. If it is to appeal to practical men and civic workers, it is important that the methods for the systematic study of cities be not only the product of the study, but also be those which may be acquired through local observation and practical effort.
2. This point of view has next to be correlated with the corresponding practical experience.
3. My problem is thus to outline such ideas as may crystallize from the experience of any moderately-travelled observer, so that his panoramic observations should gradually develop towards an orderly Regional Survey.
4. Practical experience may be acquired through varied experiences of citizenship, which rise towards a larger, more orderly conception of civic action as Regional Service.
5. This department of sociological studies should evidently be, as far as possible, concrete in treatment.

(in numerical value)

A) 51324 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. : 28

1. But a generation ago, this idea fell under suspicion as August Weismann, a zoology professor championed a new idea so effectively that it is now a part of every biologist's creed: The body does not produce the germ-cells; instead, the germ-cells produce the body.
 2. Human beings result from the union of an egg-cell and a sperm-cell and these cells are part of a continuous stream of germ-plasm ever since life appeared on the globe, and will continue as long as it exists.
 3. The idea held by him like is still held by those who have not given particular attention to the subject.
 4. Generation is conceived as a direct chain: the body produces the germ-cell which produces another body, which in turn produces another germ-cell, and so on.
 5. Early investigators looked on the germ-cells as a bodily product, which reproduce the character of the original body and Darwin elaborated how the various characters could be represented in the germ-cell.
- (in numerical value)

A) 25341 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. Puri illustrates one of the most pertinent reasons why there can never be a revolution in India.
 2. Patches of full employment ensure that joblessness is seen as a temporary phenomenon, not a permanent evil.
 3. It has nothing to do with the sanctity of the Jagannath temple or the credulity of worshippers.
 4. It's that the first of Lenin's three prerequisites for a revolutionary situation — widespread discontent — just cannot exist in this country.
- (in numerical value)

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. : 30

1. Emma Donoghue's 2010 novel Room seemed like it was made for me.
 2. After all, Room — a formally inventive story about domesticity and sexuality — falls into a category of books I love; what's more, Room asks us to perform the politically important task of closely examining women's experiences of all those topics.
 3. What's not to love about a bestselling feminist novel about sex and motherhood?
 4. The crux of my problem is the feature of Room I'm supposed to admire most: the story's treatment of how Ma's mothering relates to her suffering.
- (in numerical value)

A) 4 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. : 31

1. The accumulation of capital was of course necessary but so were a labor force and the existence of liquid water.
2. Oxygen is necessary for a fire.
3. The Great Enrichment did not come from piling brick on brick, or bachelor's degree on bachelor's degree, or bank balance on bank balance, but from piling idea on idea.

4. Contrary to economists from Adam Smith to Karl Marx to Thomas Piketty, our riches cannot be explained by the accumulation of capital, as the misleading word capitalism implies.
 5. Yet it would be unhelpful to explain the Chicago Fire of October 8–10, 1871, by the presence of oxygen in the earth's atmosphere.
- A) 43125 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. : 32

1. He called his act the "slaughter of the innocents."
2. Jesuits begin their study with a two-year novitiate period, during which Hopkins did not write a single line of verse — in fact, he would only write fragments for the next seven years.
3. In this period, Hopkins struggled with the divergent pulls of poetry and prayer.
4. That tension coaxed his best and most unique material.
5. Gerard Manley Hopkins burned all of his poems before becoming a priest.

A) 51234 B) C) D)

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

Question No. : 33

When a man produces a greater quantity of any commodity than he desires for himself, it can only be on one account; namely, that he desires some other commodity which he can obtain in exchange for the surplus of what he himself has produced. It seems hardly necessary to offer any thing in support of so necessary a proposition; it would be inconsistent with the known laws of human nature to suppose, that a man would take the trouble to produce anything without desiring to have anything. If he desires one thing, and produces another, it is only because the thing which he desires can be obtained by means of the thing which he produces, and better obtained, than if he had endeavoured to produce it himself.

1. The purpose of producing something that is not desired can only to obtain something in exchange.
2. The purpose of producing something in excess that desired by oneself is to obtain something he desires in exchange for it.
3. The purpose of producing something that is desired can only to obtain something in exchange that is not desired.
4. The purpose of producing something is desired is further justified by exchanging it for something is also desired but not produced.

A) 2 B) C) D)

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

Question No. : 34

Coming from a scientist, this sounds smug, but here it is: science is one of humanity's most noble and successful endeavours, and our best way to learn how the world works. We know more than ever about our own bodies, the biosphere, the planet and even the cosmos. We take pictures of Pluto, unravel quantum mechanics, synthesise complex chemicals and can peer into (as well as manipulate) the workings of DNA, not to mention our brains and, increasingly, even our diseases. Sometimes science's very success causes trouble, it's true. Nuclear weapons – perhaps the most immediate threat to life on Earth – were a triumph for science. Then there are the paradoxical downsides of modern medicine, notably overpopulation, plus the environmental destruction that science has unwittingly promoted. But these are not the cause of the crisis faced by science today. Today science faces a crisis of legitimacy which is entirely centred on rampant public distrust and disavowal.

1. Science, without its successes and downfalls, faces the issue of public distrust because of its legitimacy
2. Science, despite its successes and downfalls, faces the issue of public distrust caused by its legitimacy
3. Science, irrespective of its successes and downfalls, faces the issue of legitimacy driven by public distrust
4. Science, despite its successes and downfalls, faces the issue of legitimacy driven by public distrust

A) 4 B) C) D)

Section : DI & Reasoning

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

Question No. : 35

Four teams - A, B, C and D - participated in a three-day cricket tournament. Each team plays exactly one match on each day, i.e., day 1, day 2 and day 3, and plays with a different team on each day.

If B plays with A on day 2, which of the following statements is definitely true? (Answer in option)

1. If A plays with D on day 3, then C plays with B on day 1
2. If B plays with D on day 3, then C plays with B on day 1
3. C plays with D on day 3
4. B plays with D on day 1

A) 2 B) C) D)

Question No. : 36

Four teams - A, B, C and D - participated in a three-day cricket tournament. Each team plays exactly onematch on each day, i.e., day 1, day 2 and day 3, and plays with a different team on each day.

If C plays with D on the day after it plays with A, Then which of the following statements is definitely false? (Answer in option)

1. B plays with D on day 1
2. B plays with C on day 3
3. A plays with D on day 2
4. More than one of the above

A) 3 B) C) D)

Question No. : 37

Four teams - A, B, C and D - participated in a three-day cricket tournament. Each team plays exactly onematch on each day, i.e., day 1, day 2 and day 3, and plays with a different team on each day.

If A did not play with C on day 1 and B did not play with A on day 2, then who played against A on day 3?

A) B B) C C) D D) Cannot be determined

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

Question No. : 38

In a school, there are seven classrooms, one each for classes I through VII. These classrooms were built around a circular garden such that classes I to VII are accommodated in that order. The following table gives the sum of the number of students in any group of three consecutively situated classes.

Classes	Total Students
I, II, III	300
II, III, IV	280
III, IV, V	240
IV, V, VI	195

V, VI, VII	215
VI, VII, I	235
VII, I, II	260

The percentage of girls in different classes are 30%, 40%, 44%, 45%, 50%, 55% and 60%, not necessarily in any order.

At least how many classes contain more than 30 girls?

- A) 3 B) C) D)

Question No. : 39

What is the maximum possible difference between the number of boys in one class and the number of girls in another class?

- A) 60 B) C) D)

Question No. : 40

If it is known that x classes have an equal number of girls, then what is the maximum possible value of x ?

- A) 2 B) 3 C) 4 D) 5

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

Question No. : 41

Four exams are to be ranked from 1 to 4 on the basis of the number of test takers - the one with the highest number of test takers being ranked 1 and the one with the least number of test takers, being ranked 4. The exams to be ranked are MAGT, REG, TILES and FELTO.

The following data is known regarding the ranking:

- (a) If MAGT is ranked 1, then REG is not ranked 3.
- (b) If REG is not ranked 1, then FELTO is ranked 4.
- (c) If TILES is ranked 3, then FELTO is not ranked 2.
- (d) If TILES is not ranked 2, the FELTO is ranked 2.
- (e) If FELTO is ranked 3, then MAGT is not ranked 4.

Which exam has the highest number of test takers?

- A) MAGT B) REG C) TILES D) FELTO

Question No. : 42

Which exam has the least number of test takers?

- A) FELTO B) TILES C) REG D) Cannot be determined

Question No. : 43

Which exam is ranked third?

- A) FELTO B) TILES C) REG D) MAGT

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

Question No. : 44

Mr. Radhey Shyam invited his sons Pawan, Qureshi, Ramji, Shyam, Tara Chand and his ten grand children Alpha, Beta, Cita, Delta, Eita, Fanta, Gieata, Helta, Iiota and Joie i.e. on the occasion of Diwali Pooja. The following table gives the number of three different Sweets Kaju Barfi, Sandesh and Gulab Jamun that each child ate after Diwali Pooja. The second table gives the total number of

sweets each of three types eaten by the children of his sons. Further it is known that at least one son has three children.

Child	Kaju Barfi	Sandesh	Gulab Jamun
Alpha	0	0	1
Beta	0	1	0
Cita	1	0	0
Delta	1	0	1
Eita	1	1	0
Fanta	0	1	1
Gieta	1	1	1
Helta	2	0	1
Iiota	1	0	2
Joie	1	2	0

Children of	Flavour		
	Kaju Barfi	Sandesh	Gulab Jamun
Pawan	2	2	2
Qureshi	1	0	1
Ramji	1	2	1
Shyam	3	1	1
Tara Chand	1	1	2

Who among the following can be the Father of Eita?

- A) Pawan B) Qureshi C) Ram ji D) More than one of the above
-

Question No. : 45

Who among the following is the Father of Delta?

- A) Pawan B) Qureshi C) Ram ji D) More than one of the above

Question No. : 46

If Iiota is the son of Tara Chand, then who among the following must be the child of Ramji?

- A) Gieta B) Alpha C) Beta D) More than one of the above
-

Question No. : 47

If Beta is the Son of Ramji, then who among the following must be the child of Tara Chand?

- A) Alpha B) Cita C) Gieta D) More than one of the above

Question No. : 48

If Shyam has three children, then Eita must be the child of

- A) Ramji B) Pawan C) Shyam D) Cannot be determined
-

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

Question No. : 49

Researches know that exactly six prehistoric iron-working sites - Q, R, S, T, V and X existed in the Windham area. Recently, the researchers have discovered three objects 1, 2 and 3 that they know must have been made by iron-workers in the Windham area. The researchers would now like to determine the specific site at which each object was made. The objects are different enough in composition and style to leave no doubt that each was made at a different site. In addition, the researchers have established the following

- I. If any of the objects was made at Q, none of them was made at T.
- II. If any of the objects was made at R, none of them was made at S.
- III. One of the objects was made at V
- IV. Object 2 was not made at X.
- V. Object 3 was made neither at S nor at X

If neither Q nor T was a site at which any of the objects was made, which of the following must be true?

- A) Object 1 was made at X B) Object 2 was made at S C) Object 2 was made at V D) Object 3 was made at R

Question No. : 50

Researches know that exactly six prehistoric iron-working sites - Q, R, S, T, V and X existed in the Windham area. Recently, the researchers have discovered three objects 1, 2 and 3 that they know must have been made by iron-workers in the Windham area. The researchers would now like to determine the specific site at which each object was made. The objects are different enough in composition and style to leave no doubt that each was made at a different site. In addition, the researchers have established the following

- I. If any of the objects was made at Q, none of them was made at T.
- II. If any of the objects was made at R, none of them was made at S.
- III. One of the objects was made at V
- IV. Object 2 was not made at X.
- V. Object 3 was made neither at S nor at X

If Object 1 was made at T, Object 3 could have made at which of the following site?

- A) Q B) R C) S D) X

Question No. : 51

Researches know that exactly six prehistoric iron-working sites - Q, R, S, T, V and X existed in the Windham area. Recently, the researchers have discovered three objects 1, 2 and 3 that they know must have been made by iron-workers in the Windham area. The researchers would now like to determine the specific site at which each object was made. The objects are different enough in composition and style to leave no doubt that each was made at a different site. In addition, the researchers have established the following

- I. If any of the objects was made at Q, none of them was made at T.
- II. If any of the objects was made at R, none of them was made at S.
- III. One of the objects was made at V
- IV. Object 2 was not made at X.
- V. Object 3 was made neither at S nor at X

Object 1, Object 2, and Object 3 respectively could have been made at

- A) Q, S and X B) R, X and V C) T, V and S D) V, S and Q

DIRECTIONS for the question: Study the table/s given below and answer the question that follows.

Question No. : 52

The table below provides the information on some of the leading Thai cuisine restaurants in Delhi.

--

Name of restaurant	Food	Decor	Service	Price	Music	Liquor	No smoking facility
Baan Thai	4.5	4.5	4	2000-2400	No	Yes	Yes
Sukhothai	3.5	3	3	600-800	Yes	Yes	No
Blue Elephant	3.5	5	3	2000-3000	No	Yes	Yes
Spice	3.5	3.5	3	1000-2000	No	No	Yes
Spice Route	3.5	5	3	1200-2000	Yes	Yes	Yes
Turquoise Cottage	2.5	3.5	3.5	800-1000	No	No	Yes

Arindam and Suzy are Thai food lovers. Food, decor and service are the only factors for Arindam to choose a restaurant, while for Suzy, price is also an additional factor. Arindam does not visit a restaurant without a 'no smoking zone', while Suzy does not enjoy visiting a restaurant playing music. The figures in the columns under Food, Decor and Service refer to ratings for the same on a scale of 5 with 1 being the worst and 5 the best. The price refers to price of average meal for two persons.

The consolidated rating for the restaurant is the weighted sum of food, decor and service. If decor was twice as important as both food and service, which restaurant is Arindam most likely to visit?

- A) Sukhothai B) Spice Route C) Baan Thai D) Blue Elephant

Question No. : 53

A Common Friend wants to treat both Arindam and Suzy together for liquor and dinner. Which are the two likely restaurant options are available for them to go to?

- A) Spice or Spice Route B) Baan Thai or Sukhothai C) Baan Thai or Blue Elephant D) Spice or Blue Elephant

Question No. : 54

Assuming a total budget of Rs. 1,150 and relative weightages for food, decor and service being in the proportion 2 : 1: 2, what should be the restaurant to choose for the two people on the basis of consolidated rating (Given the consolidated rating for the restaurant is the weighted sum of food, decor and service)?

- A) Turquoise Cottage B) Spice Route C) Sukhothai D) Spice

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

Question No. : 55

In the Bulls Eye quiz contest, five teams from different colleges from North, South, West, East and Central zone of India came. The following facts were seen:

1. South and west teams spoke in English, but when the team from east joined them they started talking in Bengali.
2. The team from North, south, Central knew Hindi.
3. The common language between the team from west and central is Marathi.
4. Three teams can speak Urdu.
5. The language spoken by most number of teams is Bengali.
6. One team can speak all five languages.
7. One team can speak four languages.
8. One team can speak three languages.
9. One team can speak two languages.
10. One team can speak only one language.

Which teams can speak all the languages?

- A) North B) South C) West D) Cannot be determined

Question No. : 56

In the Bulls Eye quiz contest, five teams from different colleges from North, South, West, East and Central zone of India came. The following facts were seen:

1. South and west teams spoke in English, but when the team from east joined them they started talking in Bengali.
2. The team from North, south, Central knew Hindi.
3. The common language between the team from west and central is Marathi.
4. Three teams can speak Urdu.
5. The language spoken by most number of teams is Bengali.
6. One team can speak all five languages.
7. One team can speak four languages.
8. One team can speak three languages.
9. One team can speak two languages.
10. One team can speak only one language.

What is the language spoken by least number of teams?

- A) Marathi B) Urdu C) English D) Cannot be determined
-

Question No. : 57

In the Bulls Eye quiz contest, five teams from different colleges from North, South, West, East and Central zone of India came. The following facts were seen:

1. South and west teams spoke in English, but when the team from east joined them they started talking in Bengali.
2. The team from North, south, Central knew Hindi.
3. The common language between the team from west and central is Marathi.
4. Three teams can speak Urdu.
5. The language spoken by most number of teams is Bengali.
6. One team can speak all five languages.
7. One team can speak four languages.
8. One team can speak three languages.
9. One team can speak two languages.
10. One team can speak only one language.

What are the common languages spoken by the teams from North and West?

- A) Hindi and Urdu B) Bengali and Urdu C) Hindi, Marathi, Urdu D) Cannot be determined

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

Question No. : 58

Some people believe that January 1, 2000, is the first day of the 21st century. Other people feel that the honour belongs to January 1, 2001. But everyone should agree that January 1, 2002, is the first 'Sum-Day' of the new century. When you write out that date in (dd/mm/yy) notation it becomes 01/01/02, and $1 + 1 = 2$. More generally, a 'Sum-Day' is a date in which the day and the month add up to the year, only last two digits of the year is taken into account.

How many 'Sum-Day' are there in the period January 01, 2000 to December 31, 2010? (in numerical value)

- A) 45 B) C) D)
-

Question No. : 59

Some people believe that January 1, 2000, is the first day of the 21st century. Other people feel that the honour belongs to January 1, 2001. But everyone should agree that January 1, 2002, is the first 'Sum-Day' of the new century. When you write out that date in (dd/mm/yy) notation it becomes 01/01/02, and $1 + 1 = 2$. More generally, a 'Sum-Day' is a date in which the day and the month add up to the year, only last two digits of the year is taken into account.

The last 'Sum-Day' of the 21st century fell in the (Answer in option)

1. first decade of the 21st century
2. third decade of the 21st century
3. fourth decade of the 21st century
4. fifth decade of the 21st century

A) 4 B) C) D)

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

Question No. : 60

In order to promote sales, a shopkeeper is preparing a display of chocolates in blue and pink gift packs. Each gift pack will contain exactly three different chocolates from amongst 5 Star, Bournville, Crackle, Dairy Milk, Fruit n Nut, Gems and Silk. No chocolate can be packed in both gift packs. From past experience, the shopkeeper knows that:

The Bournville and the Dairy Milk must be on display in the blue and pink gift packs respectively.
The Gems can neither be displayed in the gift pack with the Dairy Milk nor in the gift pack with the 5 Star.
The Fruit n Nut and the Silk must be on display in the same gift pack.

Which of the following combinations of chocolates can be displayed in the blue gift pack?

- A) Bournville, Crackle, Gems B) Bournville, Crackle, Fruit n Nut C) Bournville, 5 Star, Silk D) Bournville, Dairy Milk, Gems

Question No. : 61

Which of the following combinations of chocolates can be displayed in the pink gift pack?

- A) Dairy Milk, 5 Star, Gems B) Dairy Milk, Fruit n Nut, 5 Star C) Dairy Milk, 5 Star, Crackle D) Dairy milk, Gems, Silk

Question No. : 62

If Silk is displayed in the blue gift pack, which of the following pairs of chocolates must be displayed in the pink gift pack?

- A) Fruit n Nut, 5 Star B) 5 Star, Crackle C) Crackle, Gems D) Fruit n Nut, Gems

Question No. : 63

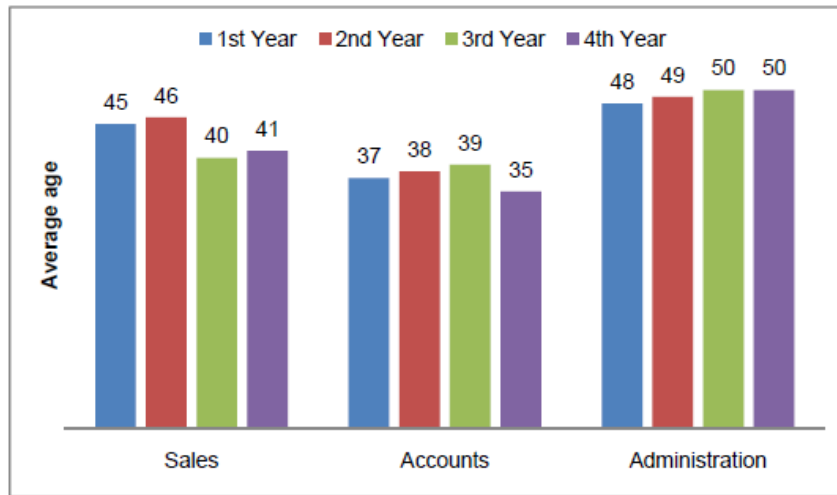
If Silk is displayed in the pink gift pack, which of the following pairs of chocolates could be displayed in the blue gift pack?

- A) Fruit n Nut, 5 Star B) 5 Star, Gems C) Fruit n Nut, Crackle D) Crackle, Gems

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

Question No. : 64

The following bar graph gives the average ages, as on 1st April of four consecutive years, of all the employees of each of the three departments - Sales, Accounts and Administration of company XYZ. Each department had at least 5 and at most 10 employees in the first year. In each department, exactly one employee, on attaining the age of 60, retired during the given period, while in exactly one of the three departments, a new employee aged 25 joined in either the second or the third or the fourth year. No employee, other than those mentioned above, left or joined any of the departments during the given period.



How many employees were there in the three departments put together, during the second year? (in numerical value)

- A) 20 B) C) D)

Question No. : 65

In which department did the new person join?

- A) Sales B) Accounts C) Administration D) Cannot be determined

Question No. : 66

How many people were there in the sales department in the fourth year? (in numerical value)

- A) 5 B) C) D)

Section : Quantitative Ability

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

Question No. : 67

Rohit purchased two apples, a mango and a banana and paid a total amount of Rs.20 for all the fruits together. If the prices (in Rs.) of the fruits were all positive integers, for how many combinations of prices of the fruits would this have been possible? (in numerical value)

- A) 81 B) C) D)

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

Question No. : 68

The whole numbers from 0 to 84 (both inclusive) are written, from left to right, on a thin, long metal sheet, in the ascending order, all along its length, such that the gap between any two consecutive digits is the same. If the sheet is now cut into four equal pieces along its length, using three cuts, what is the sum of the two digits on either side of the rightmost cut? (in numerical value)

- A) 10 B) C) D)

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

Question No. : 69

ABC is an equilateral triangle of side 1 cm. Three circles, each of radius 1 cm, are drawn tangential to each of the sides AB, BC, AC at their midpoints, outside the triangle. Find the ratio of the area of the triangle formed by joining the centres of these circles to the area of the equilateral triangle.

- A) 4 : 1 B) $2(\sqrt{3}+1):2$ C) $13+4\sqrt{3}:4$ D) 2 : 1

DIRECTIONS for the question: Mark the best option:

Question No. : 70

Ram's watch is 10 minutes slow while Laxman's watch is 5 minutes ahead. Exactly at 2:20 pm by their respective watches they both start at the speed of 50 km/h. Ram travels from Chandigarh to Ludhiana and Laxman travels in the opposite direction. If the distance between Ludhiana and Chandigarh is 100 km, what will be the time in Laxman's watch when they cross each other?

- A) 3 : 22.5 p. m. B) 3 : 27.5 p. m. C) 3 : 12.5 p. m. D) 3 : 42.5 p. m.

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

Question No. : 71

In a sequence $a_1, a_2, a_3, \dots, a_{15}$ the following conditions are valid.

a_1, a_4, a_7, \dots are all positive multiples of 3.

a_2, a_5, a_8, \dots are all positive multiples of 4.

a_3, a_6, a_9, \dots are all positive multiples of 5.

If $a_1 < a_2 < a_3 < a_4 \dots < a_{15}$, find the smallest value of $\sum_{n=1}^{15} a_n$

- A) 150 B) 272 C) 239 D) None of these

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

Question No. : 72

If K is any natural number, such that $100 \leq K \leq 200$, how many Ks exist such that K! has 'x' zeroes at the end and $(K + 1)!$ has 'x + 2' zeroes in the end? (in numerical value)

- A) 3 B) C) D)

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

Question No. : 73

Nikita wants to double her money by investing it in an appropriate scheme. She has four options to choose from. She can invest her money with Rita, who will give 12% p.a. but will hold the investment for a minimum of 6 years. She can invest her money with Ram, who will give 8% p.a. for a maximum of 5 years. She can invest her money with Meena, who will give 17% p.a. for a maximum of three years. She can invest her money with Anuradha, who will give 10% p.a., for a time period not exceeding 6 years. Assuming all the interest rates are compounded annually, who should Nikita invest her money with?

- A) Ram B) Rita C) Meena D) Anuradha

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

Question No. : 74

I have an amount of Rs.10 lakh, which I want to invest in stocks of some companies. I always invest only amounts that are

multiples of Rs.1 lakh in the stocks of any company. If I can choose from among the stocks of five different companies, in how many ways can I invest the entire amount that I have? (in numerical value)

- A) 1001 B) C) D)

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

Question No. : 75

Find the area (in sq.units) of the region bounded by the graphs of $x^2 = 4$ and $y^2 = 4$ but lying outside the region bounded by the graphs of $y = |x| - 2$ and $y = 2 - |x|$

- A) 4 B) 16 C) 8 D) None of these

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

Question No. : 76

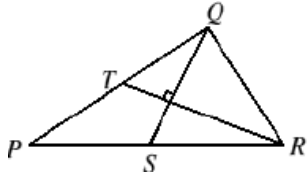
How many unique sums greater than zero can be made using any number of notes from 100 notes each of Rs. 2 and Rs. 5 denomination?

- A) 700 B) 698 C) 697 D) None of these

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

Question No. : 77

In triangle PQR, S and T are the mid-points of PR and PQ respectively; QS is perpendicular to RT; QS = 8; RT = 12.



What is the area of triangle PQR? (in numerical value)

- A) 64 B) C) D)

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

Question No. : 78

There are two drums D_1 and D_2 , each of which is filled to the brim with water. Now, a leak is made at the bottom of each of D_1 and D_2 , such that the leak in D_1 takes 6 hours to empty it, while the leak in D_2 takes 9 hours to empty it. If the capacity of D_1 is more than the capacity of D_2 by 60%, then find the time after which the volume of water in D_2 will be 25% more than the volume of water in D_1 .

- A) $2\frac{17}{23}$ hours B) $4\frac{1}{2}$ hours C) 3 hours D) $4\frac{2}{3}$ hours

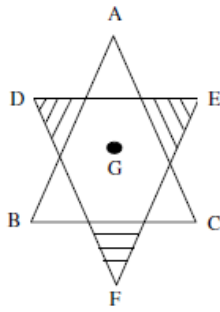
DIRECTIONS for the question: Solve the following question and mark the best possible option.

Question No. : 79

$\triangle ABC$ and $\triangle DEF$ are equilateral triangles and G is the centroid of both the triangles. $DE \parallel BC$. What

is the ratio of the sides of $\triangle ABC$ and $\triangle DEF$ if the total shaded area is $\frac{A}{12}$, where A is the area of

$\triangle ABC$?



- A) 3 : 1 B) 4 : 3 C) $\sqrt{5} : 2$ D) $\sqrt{2} : 5$

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

Question No. : 80

A man bought a Scooter and a car. If he sold the scooter at 10% loss and the car at 20% gain, he would not lose anything; but if he sold the Scooter at 5% loss and the car at 5% gain, he would lose Rs. 10 in the bargain. The amount paid by him for the Scooter was :

- A) 400 B) C) D)

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

Question No. : 81

Dipankar wanted to build a 15 ft. \times 25 ft. shed with a height of 10ft. Ganesh agreed to build the walls at a charge of Rs. 150 per day or part thereof. Raman agreed to build the floor and ceiling at a charge of Rs. 200 per day or part thereof. Bala agreed to paint the walls and the ceiling at a charge of Rs. 125 per day or part thereof. If Ganesh can build 36 sq. ft. per day, Raman can build 45 sq. ft. per day and Bala can paint 80 sq. ft. per day, what was the total wages paid by Dipankar?

- A) Rs. 9350 B) Rs. 8725 C) Rs. 8480 D) Rs. 8325

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

Question No. : 82

In a class there are students belonging to three different streams A, B and C. On the day the movie *Dil Chahta Hai* was released exactly 76% of A, 25% of B and 58% of C were absent. What is the minimum possible number of students who were present in the class? (in numerical value)

- A) 30 B) C) D)

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

Question No. : 83

Find the sum of the first 20 terms of the series, 1, 6, 21, 52, 105, 186. .. (in numerical value)

- A) 41440 B) C) D)

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

Question No. : 84

In ΔABC , $\angle ACB = 90^\circ$ and $AC > BC$. CM and CH are the median and the altitude emanating from C respectively. If $AB = 12$ and $MH = 2$, what is the ratio of the areas of ΔACM and ΔBCH ?

- A) 9 : 4 B) 3 : 5 C) 2 : 5 D) 3 : 2
-

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

Question No. : 85

The indices of the highest powers of 5 in $N!$ and $M!$ are 64 and 28 respectively. Find the maximum difference between the values of N and M . (in numerical value)

- A) 144 B) C) D)

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

Question No. : 86

A container consists of 30 L of a mixture of A and B. The ratio of the volumes of A and B is 3 : 2. From this container 6 L of solution is removed and replaced with C. The same process is repeated once more.

What is the amount of C in the solution at the end of the second operation?

- A) 4.8 L B) 3.6 L C) 10.8 L D) None of these
-

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

Question No. : 87

An insurance company earns Rs. 250 per person as annual premium for MEDICLAIM insurance that covers hospitalization bill up to Rs. 18,900 at the rate of 80% of actual bills. It is estimated that only 1 out of every 100 insured persons would incur the hospitalization bill of Rs.15, 000. This scheme costs the insurance company 10% of the revenue as administrative cost.

In the situation given above, if instead of 1, 1.6 out of hundred incur hospitalization bills and the company wants to maintain its profit per person, how much should be the premium charged?

- A) Rs. 325 B) Rs. 300 C) Rs. 330 D) None of these

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

Question No. : 88

What are the positive values of x that satisfy $\frac{x^2 - 4x - 4}{x^2 - 7x + 6} < \frac{2}{3}$?

- A) $0 < x < 2$ B) $0 < x < 1$ C) $x > 4$ D) $0 < x < 4$
-

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

Question No. : 89

If $|a + 6| = 9$ and $|2b - 12| = 20$, then find the difference between the maximum and minimum possible values of a/b ?

- A) 75/16 B) 65/16 C) 85/16 D) 75/14

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

Question No. : 90

If K! has exactly 6 different prime factors, find the value of K?

- A) 6 B) 11 C) 13 D) More than one value of K exists
-

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

Question No. : 91

There were three items being sold in a shop. Item A costs Rs. 10, item B costs Rs. 12 and item C costs Rs. 13. One day the shop has 120 customers. The shopkeeper noted that 70 items of A were sold, 40 of item B were sold, 80 of item C were sold. What was the maximum number of customers who did not buy anything if no customer bought more than two items of one type? (in numerical value)

- A) 80 B) C) D)

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

Question No. : 92

There are three tanks. Tank 1 and Tank 2 have outlets that fill into tank 2 and tank 3 respectively. The outlets from tank 1 leaks out water at the rate of 6 L/min into tank 2 and the leak from tank 2 leaks out water into tank 3 at the rate of 2 L/min respectively. The water is supplied into the tank 1 through an inlet pipe. Assume that as soon as the water enters the tank 1 it is leaked out into tank 2, tank 3 instantaneously.

What should be the minimum volume of tank 1 if all the tanks get filled up simultaneously in 2 min, if the inlet pipe to tank 1 fills at the rate of 10 L/min?

- A) 8 L B) 12 L C) 16 L D) Data insufficient
-

Question No. : 93

There are three tanks. Tank 1 and Tank 2 have outlets that fill into tank 2 and tank 3 respectively. The outlets from tank 1 leaks out water at the rate of 6 L/min into tank 2 and the leak from tank 2 leaks out water into tank 3 at the rate of 2 L/min respectively. The water is supplied into the tank 1 through an inlet pipe. Assume that as soon as the water enters the tank 1 it is leaked out into tank 2, tank 3 instantaneously.

What is the ratio of the volumes of the tanks so that if the water is supplied at 20 L/min, all the tanks get filled simultaneously after some time?

- A) 10:3:1 B) 7:3:1 C) 7:2:1 D) 2:2:1

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

Question No. : 94

The logarithm of $16\sqrt[3]{32}$ to the base of $\sqrt[3]{2}$ is

- A) 17 B) C) D)
-

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

Question No. : 95

Find the number of zeroes immediately following the decimal point in $\left(\frac{2}{3}\right)^{432}$.

Given $\log_{10} 2 = 0.301$ and $\log_{10} 3 = 0.477$.

- A) 76 B) C) D)

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

Question No. : 96

"TASTY SWEET HOUSE" sells laddus in boxes of different sizes. The laddus are priced at Rs.5 per laddu upto 300 laddus. For every additional 10 laddus, the price of the whole lot goes down by 10 paise per laddu. What should be the number of laddus in the box that would maximize the revenue?

- A) 360 B) 380 C) 420 D) None of these

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

Question No. : 97

If a, b, c are all non-negative numbers and $a^3 + b^3 + c^3 = 12$, then what is the maximum value of $a^2 \times b^2 \times c^2$? (in numerical value)

- A) 16 B) C) D)

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

Question No. : 98

If $[x]$ is defined as the greater integer less than or equal to x , what is the value of $[\sqrt{1}] + [\sqrt{2}] + [\sqrt{3}] + [\sqrt{4}] + \dots + [\sqrt{399}]$?

- A) 5031 B) 5130 C) 3150 D) 5013

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

Question No. : 99

Three balloons — one red, one blue and one yellow escaped into the air. The combined height of the red and the yellow balloons was 100 m. The combined height of the blue and the yellow balloons was 80 m. The combined height of the red and the blue balloons was 60 m. What is the height of the red balloon? (in m)

- A) 40 B) C) D)

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

Question No. : 100

Here we have six rows of three numbers each.

1, 24, x	2, 23, y	3, 22, z
4, 21, a	5, 20, b	6, 19, c

Here x, y, z, a, b, c are all natural numbers so that the sum of any two numbers on any row is a perfect square. What is the value of $(a + b + c + x + y + z)$? (in numerical value)

- A) 430 B) C) D)