

INSTRUCTIONS

1. Read the instructions given at the beginning/end of each section or at the beginning of a group of questions very carefully.
2. This test has two sections with 60 questions – 30 questions in each section. The TOTAL TIME available for the paper is **140 minutes**. The time available for each section is 70 minutes and you cannot return to the first section once you have started the second section.
3. You are expected to show your competence in both the sections.
4. All questions carry three marks each. Each wrong answer will attract a penalty of one mark.

SECTION – I
Number of Questions = 30

DIRECTIONS for questions 1 to 6: Answer the questions independently of each other.

1. The area (in sq.units) enclosed by the graph of $|x - 1| + |y - 1| = 2$, is
 (A) 16
 (B) 4
 (C) 9
 (D) 8

2. If the point (6, 11) is the image of the point (3, 5) with respect to the line $lx + my + n = 0$, then the value of $\frac{l+m}{n} =$

$$(A) \frac{-6}{41}$$

$$(B) \frac{-6}{47}$$

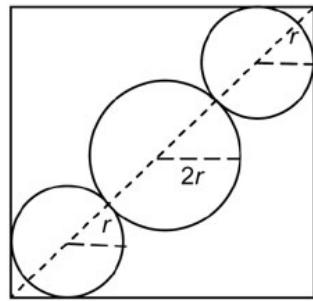
$$(C) \frac{4}{35}$$

$$(D) \frac{-4}{37}$$

3. There are n mugs of capacities $C_1, C_2, C_3, \dots, C_n$ litres such that $2 < C_1 < C_2 < \dots < C_n < 4$ litres. Each mug is filled to its capacity. The water in the mugs is then transferred to a minimum number of empty buckets, each of volume 4 litres, such that unless a bucket has enough empty space to hold all the water from a mug, the water from the mug is not transferred into that bucket but instead transferred into a new, i.e., empty bucket. If each of the buckets used in the process is now filled to the brim by adding milk, the total volume of milk (in litres) required is definitely more than

- (A) nC_n
 (B) nC_1
 (C) $n(4 - C_n)$
 (D) $n(4 - C_1)$

4. Three circles, of radii r , $2r$ and r , are drawn, with their centres on the diagonal of a square, touching one another and the square as shown in the figure below. What is the ratio of the radius of the smaller circles to the side of the square?

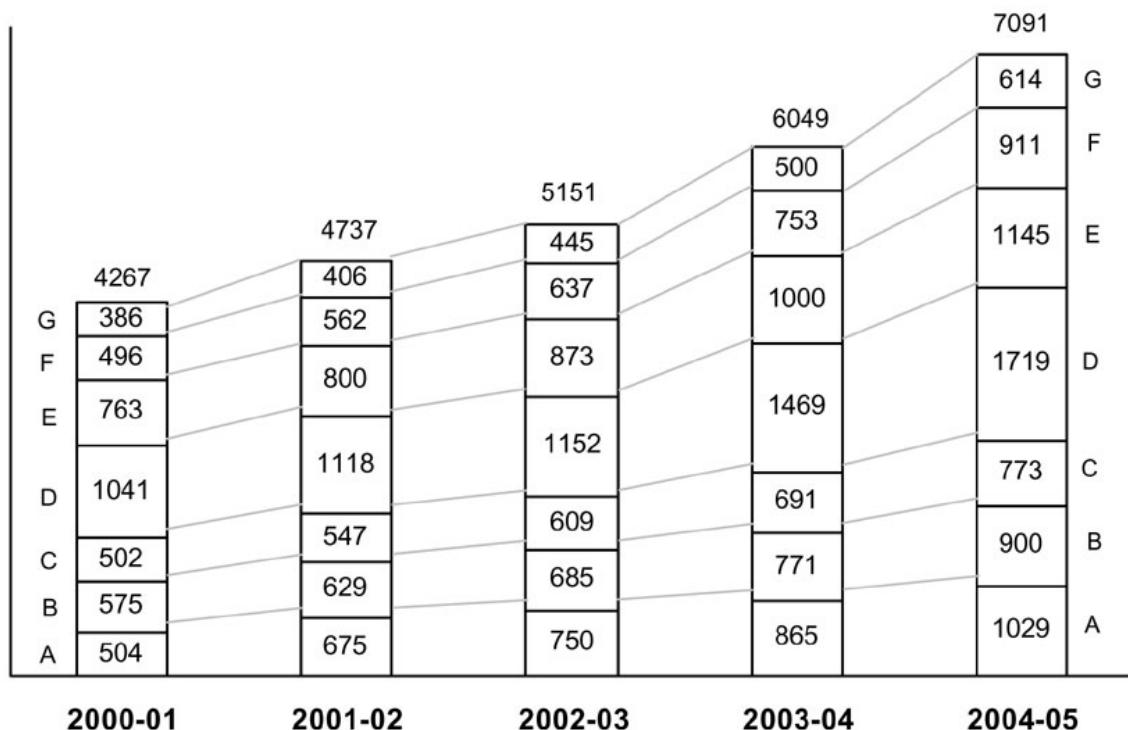


- (A) $\frac{3-\sqrt{2}}{14}$ (B) $\frac{3\sqrt{2}-2}{14}$
 (C) $\frac{3\sqrt{2}-2}{7}$ (D) $\frac{3-\sqrt{2}}{7}$

5. The LCM of two numbers is 315. Which of the following cannot be the sum of the two numbers, given that their HCF is a prime number greater than 3?
 (A) 322 (B) 98
 (C) 320 (D) 126

6. The sum of the first and the third digits of a four-digit number is equal to the sum of the other two digits. The sum of the first and second digits is half of the sum of the other two digits. The sum of the first two digits is one and a half times the fourth digit. Find the fourth digit.
 (A) 4 (B) 6
 (C) 7 (D) 5

DIRECTIONS for questions 7 to 9: Answer the questions on the basis of the information given below.



The above bar chart indicates the sales revenue (in ₹million) of seven companies – A, B, C, D, E, F and G – of an industrial group, for the years 2000 to 2005. The value given at the top of each bar represents the total revenue of the group in that year.

7. If for each year, the group of companies are ranked in the descending order of their sales revenues, how many companies do not change their ranking more than once over the five years?
(A) 1 (B) 4 (C) 3 (D) 5
8. Identify the company whose sales revenue increased by exactly the same amount in two successive pairs of years.
(A) E (B) G (C) F (D) C
9. Which of the following companies maintained a constant rank over the years in terms of its percentage contribution to the total revenue of the group in each year?
(A) A (B) C (C) E (D) F

DIRECTIONS for questions 10 to 14: Answer the questions independently of each other.

10. Set A has six elements. Four subsets P, Q, R and S are chosen from A at random. What is the probability that $P \cap Q \cap R \cap S = \emptyset$?
(A) $\left(\frac{15}{16}\right)^6$ (B) $1 - \frac{(15)^6}{16^5}$
(C) $\frac{16^5}{15^7}$ (D) $\frac{16^5}{15^6}$

11. If a natural number N has 12 factors, then which of the following is not a possible value for the number of factors of N^2 ?
(A) 23 (B) 45 (C) 35 (D) 48

12. Find the positive square root of
 $27 - 6\sqrt{6} + 12\sqrt{3} - 6\sqrt{2}$.
(A) $3\sqrt{2} - \sqrt{3} - \sqrt{6}$ (B) $3 + 2\sqrt{3} - \sqrt{6}$
(C) $2\sqrt{6} + 3\sqrt{3} - \sqrt{2}$ (D) $3\sqrt{2} + \sqrt{6} - \sqrt{3}$

13. An arithmetic progression a_1, a_2, a_3, \dots consists of natural numbers with a common difference of 18. If x is the m^{th} term and y is the average of the first n ($n \neq m$) terms, which of the following could be a possible value of (x, y) ?
(A) (23, 37) (B) (42, 69)
(C) (45, 56) (D) (54, 69)

14. ABC is a triangle, right-angled at B. The circle inscribed in the triangle touches AB, BC and CA at D, E and F respectively. If $BE = 3$ cm and $AD = 4$ cm, find AC.
(A) 17 cm (B) 21 cm
(C) 25 cm (D) 29 cm

DIRECTIONS for questions 15 to 17: Answer the questions on the basis of the information given below.

A company has six regional dealers, seven wholesale dealers and nine sub-dealers. The regional dealers are A, B, C, D, E and F. The wholesale dealers are G, H, I, J, K, L and M, and the sub-dealers are N, O, P, Q, R, S, T, U and V. Table-A gives the cost of transporting one truckload of the company's products from any regional dealer to any wholesale dealer. Table-B gives the cost of transporting the same quantity of products from any wholesale dealer to any sub-dealer.

Table – A

(in Rupees)

	A	B	C	D	E	F
G	4641	2685	2839	2949	2949	4001
H	1555	2984	4428	3799	3799	3969
I	2255	0	1601	3901	3603	5001
J	1855	751	1751	3751	3252	4901
K	5568	1572	0	5788	5788	5117
L	3085	2584	3782	5329	5329	2032
M	3222	1496	2686	5466	5466	3119

Table – B

(in Rupees)

	G	H	I	J	K	L	M
N	2814	4216	1572	4446	0	3774	2686
O	2664	4016	1423	3953	476	3298	2210
P	2503	3901	0	2286	1028	2746	1658
Q	1164	1811	1431	1377	2618	2626	3358
R	1726	1343	1581	816	2779	2086	1139
S	2251	3221	1731	1861	4663	2014	1891
T	3272	0	2983	1113	4428	1938	1742
U	4021	748	3136	1802	5172	2686	2491
V	3230	1275	2168	688	3488	566	808

15. What is the least cost of transporting one truckload of the company's products from any regional dealer to the sub-dealer O?
 (A) ₹0 (B) ₹1423 (C) ₹476 (D) ₹1028
16. What is the least cost of transporting one truckload of the company's products from the regional dealer A to any sub-dealer?
 (A) ₹1423 (B) ₹1555 (C) ₹2255 (D) ₹475
17. What is the least cost of transporting one truckload of the company's products from the sub-dealer A to the sub-dealer N?
 (A) ₹3827 (B) ₹5568
 (C) ₹5771 (D) ₹4235

DIRECTIONS for questions 18 to 22: Answer the questions independently of each other.

18. If $f(x) = \frac{2x^2 - 5}{2x^2 + 1}$, then the minimum value of $f(x)$ is
 (A) 6 (B) 0 (C) -6 (D) -5

19. For real numbers x and y , let
 $f(x, y) = (x + y)^2$, if $x + y \geq 0$
 $= -(x + y)$, if $x + y < 0$
 $g(x, y) = \sqrt{x+y}$, if $x + y \geq 0$
 $= (x + y)^2$, if $x + y < 0$

Which of the following expressions is necessarily positive for non-zero real numbers x and y ?

- (A) $(f(x, y))^2 - (g(x, y))^2$
 (B) $(f(x, y))^2 - g(x, y)$
 (C) $f(x, y) + g(x, y)$
 (D) $f(x, y) - g(x, y)$

20. Seven runners – A, B, C, D, E, F and G – start simultaneously from the same point, with speeds that are in the ratio of 1 : 2 : 3 : 4 : 5 : 6 : 7 respectively, and run a race around a circular track. If A, C, E, and G run in the same direction, while the remaining run in the opposite direction, at how many distinct points on the track does A meet any other runner?
 (A) 17 (B) 12 (C) 11 (D) 18

21. If $N = 2^{1500}$, what is the remainder when N is divided by 13?
 (A) 1 (B) 2 (C) 4 (D) 12
22. If $a : b = 3 : 2$; $b : c = 4 : 5$; $c : d = 5 : 6$ and $d : e = 6 : 5$, then find the value of $\frac{ad + ce}{bc + ae}$.
 (A) 1.22 (B) 1.33 (C) 1.44 (D) 1.66

DIRECTIONS for questions 23 to 25: Answer the questions on the basis of the information given below.

Mr. Chauhan had taken the dealership of 'Neo Sky', a DTH operator in his town. In an effort to popularise the concept of DTH in his town, he offered the customers a 50% discount on the monthly subscription of ₹200 for the first six months. For receiving a connection, the customers had to first purchase a set-top box worth ₹3000 on the 10th of any month, from February to July. If satisfied with the connection, the customer had the option of renewing the connection each month by renewing it on the 9th of that month. Else, the customer could return the set-top box and would be refunded ₹2750, after accounting for a cancellation fee of ₹250.

The following table gives the number of set-top boxes installed by Mr. Chauhan and the number of connections renewed by the customers in different months, starting from March to August, when the initial offer ended.

Month	Number of new connections	Number of old connections renewed
February	155	—
March	29	103
April	41	99
May	69	83
June	26	114
July	52	95
August	—	128

Though no new set-top box was installed under the offer in August, the existing customers had the option of renewing their connection in August.

23. The number of connections that were renewed at least once during the period from March 9th to August 9th was at least
 (A) 103 (B) 131

- (C) 167 (D) None of these
24. The number of connections that were not renewed even once was at least
 (A) 52 (B) 79
 (C) 74 (D) None of these
25. Of the number of new connections given in February, at most how many were renewed throughout the offer period?
 (A) 99 (B) 103
 (C) 83 (D) None of these

DIRECTIONS for questions 26 to 30: Answer the questions independently of each other.

26. The decimal equivalent of $(123.21)_4$ is
 (A) 24.2625 (B) 27.0625
 (C) 27.5625 (D) None of these
27. Consider the following sum of 2^{32} terms:
 $S = 1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6} + \dots + \frac{1}{2^{32}}$,
 Which of the following statements is true of S?
 (A) $5 < S < 8\frac{1}{2}$ (B) $9 < S < 16\frac{1}{2}$
 (C) $17 < S < 32\frac{1}{2}$ (D) $33 < S < 64\frac{1}{2}$
28. The average age of a newly married couple is 30 years. Thirteen years later, the average age of their family consisting of the two of them and one child is 32 years. A second child is born at that stage. What is the average age (in years) of the two children after 6 more years?
 (A) 16 (B) 22 (C) 12 (D) 11
29. A quadratic expression $f(x) = ax^2 + bx + c$ is such that $f(-2) < 4$; $f(2) > -4$ and $f(3) < -11$. Which of the following best describes a?
 (A) $a < -2$ (B) $a < -1$ (C) $a > 1$ (D) $a > 2$
30. In a certain infinite geometric progression, the sum of any three consecutive terms equals 26 times the sum of all the terms that follow them. Find the ratio of any term of the progression to the sum of all the terms that follow it.
 (A) 8 : 1 (B) 4 : 1 (C) 1 : 1 (D) 2 : 1

SECTION – II

Number of Questions = 30

DIRECTIONS for questions 1 and 2: In the following questions, the word in capitals is used in four different ways. Choose the option in which the usage of the word is INCORRECT or INAPPROPRIATE.

1. STAND
 (A) His hare-brained ideas did not stand out in the board room and were rejected by the Director.
 (B) I had to stand in for Darryl on Wednesday when he couldn't make it for the grand finale of the music competition.
 (C) They cut down a stand of trees to make way for the Metro railway bridge.

(D) The minister stood his ground in the face of corruption charges from the opposition party.

2. TWIST
 (A) The old couple liked to dance the twist.
 (B) Reporters sometime twist you in order to sensationalize news.
 (C) If the U.S. ambassador to China was so trustworthy, why had he been left to twist in the wind?
 (D) The leakage from the liquid nitrogen cylinder was stopped with a simple twist of the valve.

DIRECTIONS for questions 3 to 5: Each of the following questions has a paragraph from which the last sentence has been deleted. From the given options, choose the sentence that completes the paragraph in the most appropriate way.

3. One can say that the computer has taken us back to the Gutenberg galaxy. People who spend their nights engaged in unending conversations over the internet are dealing principally with words. If the TV screen is akin to a window through which one sees the world in images, the computer screen is akin to a book which presents the world in words and pages. The classical computer displays written lines in linear form, like an easy-to-read book. And now, we have progressed to hypertexts as well. In a book, one reads from left to right (or right to left, or up to down, according to different languages). One can skip through the pages. One, having arrived at page 300, can go back to check or re-read something on page 10 - but this implies labour, physical labour.
- (A) If you even consider that a hypertext is usually also multimedial, the complete hypertextual diskette will in the next future replace not only books but also videocassettes and many other supports.
(B) On the contrary a hypertext is a multidimensional network in which every point or node can be potentially connected with any other node.
(C) Now we must ask ourselves if such a perspective is a realistic one or is mere science-fiction – as well as if the distinction we have just outlined between visual and alphabetic communication, books and hypertexts is really that simple.
(D) The linear way of thinking instituted by the invention of the press, is on the verge of being substituted by a more global way of perceiving and understanding through hypertexts, TV images or other kinds of electronic devices; which are not alien to the resonating diversity of spoken words as well and which have accepted the visual logic of Gutenberg technology.
4. One of the things that photographs do is bring us close – closer than anything else I can think of – to physical suffering and to bodily harm, to what Elaine Scarry called “the body in pain.” People often talk about the horror of war, and about the necessity of building a politics of human rights, in extremely abstract terms. I think we need to engage, far more concretely, a series of questions: What does war actually do to people? What does political oppression, defeat, physical suffering do? How are people broken? Perhaps that’s an uninspiring and un-triumphant approach, but it may be one that we need. The Iraqi writer Kanan Makiya writes about this in his book “Cruelty and Silence” – about the need to understand the substance of cruelty rather than waving around abstract ideas of national liberation and human rights. We need to understand the horrific histories that we have inherited, and that continue to be made.
- (A) So photographs are very good at conjuring up a conflicted stew of emotions but rather than censor ourselves, we should allow ourselves to experience the photographs, and then analyze what those reactions mean.
- (B) But photographs often say things that their makers do not intend, and some reveal the suffering of victims in very powerful and evocative ways.
- (C) And for me, photographs are powerful glimpses, powerful hints and are a way into those realities in ways that are truly *sui generis*.
- (D) Photography, a kind of mechanical reproduction, has become a magnet for a lot of anxieties: about politics, modernity, mass culture.
5. Quite apart from customer identification, the phrase "proper direction to take in educational reform" makes little sense if it implies a policy that the state forces down the throats of the unwilling. Policies seem to get formulated and implemented through a process whereby our best institutions develop models that the state then tells their less excellent sisters to copy. Even if we ignore the elitism underwriting this approach, it remains clear that institutions cannot copy each other's practices when resources, demography, goals and options differ grotesquely. We need to fashion a nuanced approach to the diversity of the public space within which places and institutions learn from each other without creating unhealthily asymmetric long-term dependencies. In this sense, I am against iconizing the practices at any specific place. Each institution's academic community must keep debating and evolving its own strategies and conceptualizations.
- (A) We know this capacity has to do with the imagination but we seldom explore linkages between the way we understand the imagination and the intellectual content of education.
(B) For this to happen a crucial precondition is that the potential of the energies in our public space be realized.
(C) If education is an investment in human resources whose beneficiary is the public as a whole, the focus on individual self-interest perceptions become too narrow.
(D) The arena to be reshaped through this debate is the public space itself.

DIRECTIONS for questions 6 to 8: Answer the questions on the basis of the information given below.

Four solids, namely a Sphere, a Cube, a Pyramid and a Cone are made of four different materials among Kryptonite, Wood, Diamond and Glass. Each solid is of a different colour among White, Green, Yellow and Black and each has a unique weight among 1 kg, 2 kg, 3 kg and 4 kg. The costs of these solids are ₹1 thousand, ₹1 million, ₹1 billion and ₹1 trillion. Each of the solids is manufactured by exactly one process among Cutting, Casting, Moulding and Forging. All the above mentioned properties of the solids are not in any particular order.

Further, the following information is available:

- (i) The Sphere is made of Diamond but it is neither Black in colour nor is it manufactured through the process of Casting.

DIRECTIONS for questions 9 and 10: Read the following passage and answer the questions that follow it.

SEVEN years after 18 white Zimbabwean farmers settled on a chunk of land in Nasawara state at the invitation of the then governor, only one family is still there. All the others have given up in despair. Bruce Spain, aged 35, and his father Colin, 66, together with their doughty wives and a pair of toddlers, are hanging on – but only just.

On flat, dry scrubland two hours' drive east of Abuja, the capital, the Spains and their Zimbabwean compatriots have experimented with a variety of farming enterprises. But crop yields were dismal, mainly due to poor-quality seed and fertiliser. Spares were hard to get when machinery broke down. The Spains' last hope is a factory that churns out chicken feed. "Until good seed is available and the theft factor is dealt with there will be very little commercial farming in Nigeria," says the older Mr Spain.

The litany of problems seems endless. "There's just no organised marketing here," says the younger Mr Spain. "No marketing boards, nothing – in Nigeria you're on your own. In Zimbabwe you knew what your pre-planting price was – and the government guaranteed to buy what you grew. There are no support structures here...In Zimbabwe you'd send a soil sample to the fertiliser company and they'd tell you what sort would be best. There's nothing like that here."

The Spaniards have no electricity, no piped water, no land-line, no trained labour force, no one handy with basic accountancy, no available research facilities, no easy access to agricultural data. Roads are lousy. Theft is endemic.

The biggest initial headache was persuading a bank to make a long-term loan at less than 20% interest. And when a bank did agree, the money might not come through. "It was always next week, then next week," says the younger Mr Spain. "That's the general story in Nigeria." For two of their first five years they did no farming, due to the lack of bank finance. "You always need contacts," he sighs. "Corruption can be helpful," he chuckles. "At least it means if you want something done you can get it done – instantly."

The older Spains, resilient as ever, have built a neat single-storey house surrounded by a tall electric fence on a rocky outcrop. It is reminiscent of Zimbabwe, where their farm was confiscated; during the guerrilla war, before independence in 1980, their homestead had been burned down. Here in Nigeria, in the searing heat, they sleep peacefully on the veranda under a mosquito net. "We get malaria between three and six times a year." It seems the least of their worries.

DIRECTIONS for question 11: In the question there are five sentences. Each sentence has pairs of words / phrases that are italicised and highlighted. From the italicised and highlighted word(s) / phrase(s), select the most appropriate word(s) / phrase(s) to form correct sentences. Then, from the options given, choose the best one.

11. It would not be fallacious to expect a terrorist to possess a **sanguine** (a) / **sanguinary** (b) attitude. The students laid their personal differences aside

and managed to **adhere** (a) / **cohere** (b) for the project.

The factors **deduced** (a) / **adduced** (b) by the research team to explain the new phenomenon could not convince the astronomers.

Unnecessary pieces of advice can **riddle** (a) / **addle** (b) anyone's brain.

The truth **emerged** (a) / **evolved** (b) owing to the exhaustive research on the subject.

(A) abaab (B) bbbba (C) ababa (D) baaab

DIRECTIONS for questions 12 and 13: The sentences given in the following questions, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. From among the four choices given below each question, choose the most logical order of sentences that constructs a coherent paragraph.

12. (a) The psychologization of manufactured goods, however, collides with the powerful thrust towards transience that makes the objects themselves so perishable.
(b) We shall become the first culture in history to employ high technology to manufacture that most transient, yet lasting of products: the human experience.
(c) We must acknowledge that we are moving swiftly in the direction of a society in which objects, things, physical constructs are increasingly transient – not merely man's relationships with them but the very things themselves.
(d) And in the end, we shall pass beyond the service economy, beyond the imagination of today's economists.
(e) For the ancient Japanese nobility every flower, every serving bowl or obi, was freighted with surplus meaning; each carried a heavy load of coded symbolism and ritual significance.
(f) Thus we shall find it easier to adorn our services with symbolic significance than our products.
(A) cafedb (B) bcaefd (C) bdceaf (D) ceafdb
13. (a) Here, too "words" – individual works of art – are coming into use and then dropping out of the vocabulary at heightened speeds.
(b) If we make this transposition, we find in art a process exactly analogous to that now occurring in the verbal language.
(c) Sometimes the work itself quite literally disappears – many are collages or constructions built of fragile materials that simply fall apart after a short time.
(d) Individual works flash across our consciousness in galleries or in the pages of mass magazines; the next time we look they are gone.
(e) If schools of art may be likened to languages, then individual works of art may be compared to words.
(A) edbac (B) ebadc
(C) dceba (D) eabcd

DIRECTIONS for question 14: The following question has a paragraph with one italicized word that does not make sense. Choose the most appropriate replacement for that word, from the options given below the paragraph.

14. The policy in the country was *klang* in many ways. Politically this was obvious. Even economically while some among the peasantry and the workers were somewhat better off owing to war conditions, large numbers had been hit hard.
(A) destructive
(B) devastating
(C) deteriorating
(D) unprecedented

DIRECTIONS for questions 15 to 17: Answer the questions on the basis of the information given below.

Consider the 3×3 grid of numbers given below. In this grid, an *operation* is defined as the interchanging of the positions of any two of the numbers. A *configuration* is defined as any unique arrangement of the numbers in the grid.

1	2	3
4	5	6
7	8	9

A 3×3 grid with the *configuration* given above is called a standard 3×3 grid.

15. What is the least number of *operations* required to rearrange the above given *configuration* into another *configuration* such that, the sum of the numbers in the rightmost column is nine more than that of the middle column and 18 more than that of the leftmost column, while the sum of the numbers in the top row is three more than that of the middle row and six more than that of the last row?
(A) 8 (B) 4 (C) 6 (D) 3
16. If the grid of numbers were to be a 4×4 grid (containing the numbers from 1 to 16), then what is the least possible number of *operations* that will always be sufficient to rearrange the grid of numbers into any given *configuration*?
(A) 8 (B) 7 (C) 15 (D) 16
17. There is a 4×4 grid of numbers. Rohan, a smart kid, could re-arrange this 4×4 grid of numbers such that the top-leftmost 3×3 grid becomes a standard 3×3 grid, in x operations. If it is known that the numbers in each row of the 4×4 grid were initially in descending order, from left to right, what is the minimum value of x ?
(A) 5 (B) 6 (C) 7 (D) 4

DIRECTIONS for questions 18 and 19: There are two blanks in each question. From the pairs of words given below each sentence, choose the pair that fills the blanks most appropriately.

18. Liberalization of India's economy has transformed the hitherto _____ and uncompetitive Indian business landscape, which is now _____ with homegrown MNCs that have offices around the world.
(A) bigoted . . . chequered
(B) conservative . . . coloured
(C) cloistered . . . speckled
(D) parochial . . . dotted

19. The book is a _____ burlesque, whose fantastic elements nevertheless have some connection with the real world, when we disregard the _____ humbug and the elephanstasis of the author's imagination, there remains the problem of the manipulation of minds,

which does not lessen the full subjective sense of spontaneity and freedom.

- (A) heterodoxical . . . nonconformist
(B) metaphysical . . . humoristic
(C) orthodox . . . accepted
(D) travesty . . . labyrinthine

DIRECTIONS for questions 20 to 22: Read the following passage and answer the questions that follow it.

MOST people would not pay two cents for something worth one. But America's government spent \$116 m last year doing just that. The money-losing purchase was money itself: the penny, which has cost more than a cent to produce since 2006, due mainly to the price of zinc, the coin's primary ingredient.

Steel is not much better, as Canada has learned. The government there recently ditched its steel-based penny. American politicians, while loath to take lessons from their northern neighbours, may have noticed. In an online forum on February 14th Barack Obama intimated that the penny was no longer change he believes in.

Fifty years ago a handful of pennies would buy a hamburger at McDonalds, but inflation means the coin won't even get you one French fry today. Relegated to jars and lost behind cushions, the penny is failing to perform its primary function: to facilitate commerce. Vending machines and parking meters don't accept it. Penny scouges note that fiddling with them adds some two seconds to each transaction, costing the economy many millions of dollars a year.

Penny lovers and zinc-industry lobbyists counter that the coin's demise would cost consumers, as merchants would round prices up to the nearest nickel. Some economists disagree, suggesting that shop keepers might in fact round down in order to avoid moving from a price of, say, \$ 9.99 to \$ 10. Americans anyway seem willing to accept a fee for penny removal, as evidenced by the self-imposed cost of leaving them idle and the success of coin-counting machines, which take a cut when turning them into bills.

Other countries have eliminated low-value coins with less-than-dire results, and indeed, so has America. In 1857 it ditched the half-cent, then worth nearly as much in real terms as today's dime. This has led some to suggest killing the nickel, which is worth five cents and costs about ten cents to make, as well as the penny.

Congress has not authorised coin culling as yet, so the Mint is studying ways to make pennies more cheaply. Mr Obama, meanwhile, is finding value in the penny's symbolism. "One of the things you see chronically in government is it's very hard to get rid of things that don't work so that we can then invest in the things that do," said the president. "The penny, I think, ends up being a good metaphor for some of the larger problems we got."

20. According to the passage, why is the penny referred to as a metaphor for larger problems?

- (A) The penny, made of zinc, cannot be easily eliminated, unlike other problems.
(B) Other problems in the state have become as worthless as the penny.
(C) Similar to the penny – a coin hard to eliminate though it serves little purpose – are certain anachronisms and irrelevancies that retard progress.
(D) The cost of making the penny is much more than its value and this is similar to the fact that efforts made to solve other issues are much higher than their actual importance.

- (B) The removal of the penny will increase the purchase cost for consumers.
(C) The cost incurred on producing a penny is more than its value.
(D) A thing as insignificant as the penny is creating overbearing problems for the government.

21. All of the following are reasons that the Americans should "kill the nickel" EXCEPT?

- (a) The cost of making a nickel is double its value.
(b) A nickel is cheaper to produce than a penny.
(c) The penny can easily substitute the nickel.
(d) A handful of pennies can buy a hamburger whereas a handful of nickels can't buy you even a French fry.
(e) In the absence of the penny, traders would raise prices to the nearest 5 cents.
(A) b, c, d and e (B) b, c and d
(C) a, b and c (D) a and e

DIRECTIONS for question 23: In the question, there are five sentences or parts of sentences that form a paragraph. Identify the sentence(s) or part(s) of sentence(s) that is/are correct in terms of grammar, punctuation, spelling and usage. Then, choose the **most appropriate** option.

22. What is the most striking contradiction in the context of the passage?

- (A) America is learning lessons from countries it disapproves of.

23. (a) There was a big polished brass door-handle in which she saw her reflected with such a funny face.

- (b) The blinds were pulled down and the young, attractive woman loved the blue-green, cool light that filled the room.
(c) It made her feel like a mermaid in a shimmering, aquamarine sea-pool.
(d) She loved the little procession of eight ivory, grey elephants marching along the brown mantelpiece.
(e) And she couldn't help but gaze admiring at the deep battenburg lace scallops on the window shades.

- (A) Only c
(B) a, b and c
(C) b, c and d
(D) d and e

DIRECTIONS for question 24: The following question presents four statements, of which three, when placed in appropriate order, would form a contextually complete paragraph. Pick the statement that is not part of that context.

24. (A) The physics of our world, the logic of theirs, does not allow it, since logic is for the personoids' universum the very same action-confining frame that physics is for our world.
(B) In any case, it is quite out of the question that we could ever fully, introspectively grasp what the personoids "feel" and what they "experience" as they go about their intensive tasks in their nonfinite universum.
(C) The personoids are in many respects similar to man; they are able to imagine a particular contradiction but cannot bring about its realization, just as we cannot.
(D) A solitary personoid is unable to go beyond the stage of rudimentary thinking, since solitary, it cannot exercise itself in speech, and without speech, discursive thought cannot develop.

DIRECTIONS for questions 25 and 26: Each question is followed by two statements, I and II. Answer each question using the following instructions.

- Choose A if the question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.
Choose B if the question can be answered by using either statement alone.
Choose C if the question can be answered by using both statements together, but cannot be answered using either statement alone.

Choose D if the question cannot be answered even by using both statements together.

25. Two suspects, Karan and Johar, are arrested in a robbery case. It is known that if one of them makes a true statement, then the other also makes a true statement. Is Karan a thief?

- I. Karan said, "Both of us are thieves."
II. Johar said, "I am not a thief."

26. Four persons – Sanjay, Varthan, Uday and Phani – got the top four ranks in Sociology and Cosmology, not necessarily in the same order. No two persons got the same rank in any subject and no person got the same rank in both the subjects. Also, the sum of the ranks of no two persons is the same. What is the rank in Sociology of the person who got the second rank in Cosmology?

- I. Sanjay got the third and fourth ranks in Sociology and Cosmology respectively.
II. Varthan got the second and first ranks in Sociology and Cosmology respectively.

DIRECTIONS for question 27: Answer the questions independently of each other.

27. Among the five statements given below, how many pairs of statements are there such that they will give at least one logical conclusion when taken together? Do not consider conclusions that can be drawn from only one of the two statements alone.

- A. Many triangles are not circles.
B. No rectangle is a triangle.
C. Some triangles are polygons.
D. Few polygons are not squares.
E. Square is a rectangle.

(A) 4 (B) 3 (C) 1 (D) 2

DIRECTIONS for questions 28 to 30: Read the following passage and answer the questions that follow it.

Preface

In his first essay (*Federalist, Number 10*), James Madison discussed the idea of political factions. At the time it was commonly agreed that democratic society needed to prevent factions because they would ultimately undermine the government and lead to violence. Madison agreed that factions can divide governments. In Madison's view, more factions would make it likely that a coalition of parties would be able to gain control of government and invade the rights of other citizens. The system of checks and balances contained in the constitution was part of Madison's plan for frustrating factions.

Essay

Among the numerous advantages promised by a well constructed Union, none deserves to be more accurately developed than its tendency to control the violence of faction. The friend of popular governments never finds himself so much alarmed for their character and fate, as when he contemplates their propensity to this dangerous vice. The injustice and confusion introduced into public councils, have been mortal diseases under which popular governments have everywhere perished; as they continue to be favorite topics from which adversaries to liberty derive their most specious declamations. Complaints are heard from our most considerate citizens that governments are unstable, that public good is disregarded in the conflicts of rival parties, and measures are decided, not according to rules of justice and rights of minor parties, but by superior force of an overbearing majority. The distresses under which we labor have been erroneously charged on governments; but other causes will not alone account for many of our heaviest misfortunes; the prevailing distrust of public engagements and alarm for private rights. These must be chiefly, effects of the unsteadiness with which a factious spirit has tainted our public administration.

Faction means a number of citizens united by common impulses of passion or interest, adverse to the rights of other citizens, or to the aggregate interests of communities. To cure the mischiefs of faction, one can control its effects or remove its causes (by destroying the liberty which is essential to its existence or by giving to every citizen the same opinions/ passions).

Liberty is to faction what air is to fire, an aliment without which it instantly expires. But it could not be less folly to abolish liberty, which is essential to political life, because it nourishes faction, than it would be to wish the annihilation of air, which is essential to animal life, because it imparts to fire its destructive agency.

The second expedient is as impracticable as the first would be unwise. As long as man has the liberty to exercise reason, different opinions will be formed which will exert a reciprocal influence on his passions; and the former will be objects to which the latter attach themselves. The diversity in the faculties of men, from which rights of property originate, is not less an insuperable obstacle than a uniformity of interests. The protection of these faculties is the first object of government. From the protection of unequal faculties of acquiring property, the possession of different degrees and kinds of property immediately results; and from the influence of these on the sentiments of respective proprietors, ensues a division of the society into different interests and parties.

The latent causes of faction are thus sown in the nature of man; and we see them everywhere brought into different degrees of activity, according to various circumstances of civil society. A zeal for different opinions concerning religion and government; an attachment to different leaders ambitiously contending for pre-eminence and power or to persons of other descriptions whose fortunes have been interesting to the human passions, have, in turn, divided mankind into parties, inflamed them with mutual animosity, and rendered them much more disposed to vex and oppress each other than to co-operate for their common good. Many times, the most frivolous distinctions are sufficient to kindle their unfriendly passions and excite their most violent conflicts. But the most common source of factions is the unequal distribution of property. Those who hold and those who are without property have ever formed distinct interests in society. Those who are creditors, and those who are debtors, fall under a like discrimination. A landed interest, a manufacturing interest, a mercantile interest, a moneyed interest, with many lesser interests, grow up of necessity in civilized nations, and divide them into different classes, actuated by different sentiments. The regulation of these various and interfering interests forms the principal task of modern legislation, and involves the spirit of party and faction in the necessary operations of the government.

(Key and Solutions for AIMCAT1518)

Key

SECTION – I

- | | | | | | |
|------|-------|-------|-------|-------|-------|
| 1. D | 6. A | 11. D | 16. B | 21. A | 26. C |
| 2. A | 7. D | 12. D | 17. A | 22. A | 27. C |
| 3. C | 8. D | 13. B | 18. D | 23. C | 28. D |
| 4. B | 9. C | 14. C | 19. C | 24. A | 29. B |
| 5. D | 10. A | 15. C | 20. D | 25. C | 30. D |

SECTION – II

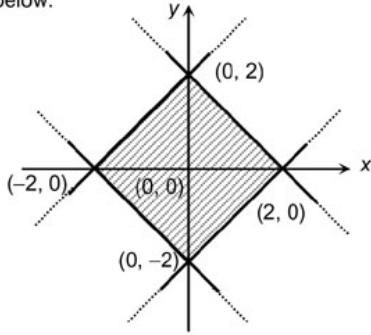
- | | | | | | |
|------|-------|-------|-------|-------|-------|
| 1. A | 6. C | 11. B | 16. C | 21. A | 26. B |
| 2. B | 7. D | 12. D | 17. A | 22. C | 27. D |
| 3. B | 8. C | 13. B | 18. D | 23. A | 28. D |
| 4. C | 9. C | 14. C | 19. B | 24. D | 29. B |
| 5. B | 10. D | 15. C | 20. C | 25. C | 30. C |

Solutions

SECTION – I

Solutions for questions 1 to 6:

1. Consider the area enclosed by the graph of $|x| + |y| = 2$, given below.



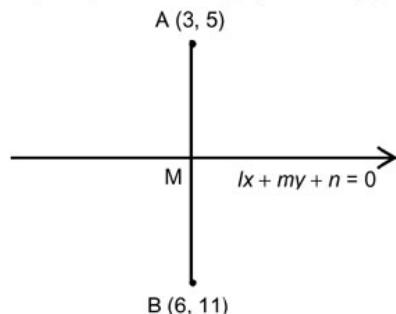
The area of the shaded region will be $\left(\frac{\text{The product of the diagonals}}{2}\right) = \frac{4 \times 4}{2} = 8$ sq.units

This graph can be shifted in the coordinate plane (without changing its size and shape), from the origin as its centre, to any point (a, b) as its centre.

Then the new (shifted) graph will be $|x - a| + |y - b| = 2$ [Note: The area enclosed by such a graph is independent of the values of a and b].

Hence, the area enclosed by the graph $|x - 1| + |y - 1| = 2$ is also 8 sq.units. Choice (D)

2. Let the given points be $A = (3, 5)$ and $B = (6, 11)$



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Let $B(6, 11)$ be the image of $A(3, 5)$, with respect to $lx + my + n = 0$.

The midpoint, M, of AB lies on $lx + my + n = 0$, and AB is perpendicular to $lx + my + n = 0$.

∴ The midpoint of $A(3, 5)$ and $B(6, 11)$ is $M = \left(\frac{9}{2}, 8\right)$.

Slope of AB = $\frac{(11-5)}{(6-3)} = 2$

⇒ Slope of a line perpendicular to AB = $-\frac{1}{2}$

∴ The equation of the line passing through $\left(\frac{9}{2}, 8\right)$ and

having slope $-\frac{1}{2}$ is $y - 8 = \frac{-1}{2}\left(x - \frac{9}{2}\right)$

$$y - 8 = \frac{-1}{4}(2x - 9)$$

$$4y - 32 = -2x + 9$$

$$2x + 4y - 41 = 0 \quad \dots\dots (1)$$

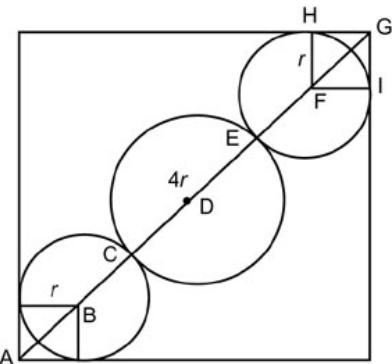
$$\text{Hence, } \frac{l+m}{n} = \frac{2+4}{-41} = \frac{-6}{41}$$

Choice (A)

3. The capacity of each mug is between 2 and 4 litres, whereas the capacity of each bucket is 4 litres. Hence, to empty n mugs, as per the given condition, n buckets are needed.

Since C_n is the greatest among all capacities, the bucket with C_n litres of water has the least empty space, i.e. $(4 - C_n)$. The empty space of other buckets is greater than this. Therefore, the total empty space must be greater than $n(4 - C_n)$. Choice (C)

4.



Join HF & FI, HF = FI = r

$$\therefore FG = \sqrt{2}r$$

$$\text{Similarly } AB = \sqrt{2}r$$

$$\therefore AB + BC + CE + EF + FG$$

$$= \sqrt{2}r + r + 4r + r + \sqrt{2}r$$

$$= 6r + 2\sqrt{2}r = \sqrt{2}a, \text{ where } a \text{ is the side of the square.}$$

$$\therefore \frac{r}{a} = \frac{\sqrt{2}}{6 + 2\sqrt{2}} = \frac{2}{4 + 6\sqrt{2}} = \frac{1}{2 + 3\sqrt{2}} = \frac{3\sqrt{2} - 2}{14}$$

Choice (B)

5. Let the two numbers be ha and hb , where h is the HCF of the two numbers.

$$\text{Given, LCM} = hab = 315$$

$$315 = 3^2 \times 5 \times 7$$

\because HCF is a prime greater than 3, it has to be 5 or 7.

$$\text{If } h = 5, \text{ then } a = 63, b = 1$$

$$\text{OR } a = 9, b = 7$$

\therefore Sum of the numbers can be $63 \times 5 + 1 \times 5 = 320$ OR

$$9 \times 5 + 7 \times 5 = 80$$

$$\text{If } h = 7, \text{ then } a = 45, b = 1$$

$$\text{OR } a = 9, b = 5$$

\therefore The sum of the two numbers can be $45 \times 7 + 1 \times 7 = 322$

$$\text{OR } 9 \times 7 + 5 \times 7 = 98$$

Among the options, only option (D) is not possible.

Choice (D)

6. Let the number be 'abcd'

$$(a + c) = b + d \quad \dots \dots (1)$$

$$2(a + b) = c + d \quad \dots \dots (2)$$

$$2(a + b) = 3d \quad \dots \dots (3)$$

$$(2), (3) \Rightarrow c = 2d$$

$$(1) \Rightarrow a + d = b$$

$$(3) \Rightarrow a + (a + d) = (3/2)d$$

$$\Rightarrow 4a = d \therefore b = 5d$$

$\therefore d = 4a, b = 5a$ and $c = 8a$. The only possibility is $a = 1$, the number is 1584 and the last digit is 4.

Alternative solution:

Let the number abcd.

$$\text{Given } a + c = b + d \quad \dots \dots (1)$$

$$a + b = \frac{1}{2}(c + d) \quad \dots \dots (2)$$

$$a + b = \frac{3}{2}d \quad \dots \dots (3)$$

From (2) and (3), $c = 2d$. Since $c \leq 9$, $2d \leq 9$. From the choices, only $d = 4$ satisfies.

Choice (A)

Solutions for questions 7 to 9:

7. Companies D, E, G, C and A did not change their ranks more than once in the five year period. Choice (D)

8. For company C, in the last two years the increase in sales revenue is exactly the same. Choice (D)

Note: To save time instead of calculating the exact increase, we can first look for the units digit of increase in two successive pairs of years and only if they are equal, then we can calculate and check for the exact increase. For example, the units digits of the increase in sales revenue of E for the pairs of successive years 2000-01 to 2001-02 and 2001-02 to 2002-03 are -7 and 3 respectively. Hence, the actual increases cannot be equal.

9. Company E has been maintaining its rank constant at 2, in the given period.

Choice (C)

Solutions for questions 10 to 14:

10. Let $A = \{a_1, a_2, \dots, a_6\}$

Let P, Q be two subsets of A and $a_i \in A$. Then, the following cases arise:

$a_i \in P$ and $a_i \in Q$

$a_i \in P$ and $a_i \notin Q$

$a_i \notin P$ and $a_i \in Q$

$a_i \notin P$ and $a_i \notin Q$

Among these 4 cases, in 3 cases, $P \cap Q = \emptyset$.

Now, if P, Q and R are three subsets of A and $a_i \in A$, then the following cases arise:

$a_i \in P, a_i \in Q, a_i \in R$

$a_i \in P, a_i \in Q, a_i \notin R$

$a_i \in P, a_i \notin Q, a_i \in R$

$a_i \in P, a_i \notin Q, a_i \notin R$

$a_i \in P, a_i \in Q, a_i \notin R$

$a_i \in P, a_i \notin Q, a_i \in R$

$a_i \in P, a_i \notin Q, a_i \notin R$

among these 8 cases, in 7 cases $P \cap Q \cap R = \emptyset$

Similarly, if we consider four subsets P, Q, R and S of A, then out of the 16 possible cases, 15 cases satisfy $P \cap Q \cap R \cap S = \emptyset$

Since A contains 6 elements, required probability $\frac{15^6}{16^6}$

Choice (A)

11. If N has 12 factors, the complete list of the possible forms of N are

$$N = a^{11} \text{ OR } N = a \times b^5 \text{ OR } N = a^2 \times b^3 \text{ OR } N = a \times b \times c^2$$

[$\because 12 = (12 \times 1)$ OR (2×6) OR (3×4) OR $(2 \times 2 \times 3)$]

N^2 can correspondingly be of the forms

$$N^2 = a^{22} \text{ OR } N^2 = a^2 \times b^{10} \text{ OR } N^2 = a^4 \times b^6 \text{ OR }$$

$$N^2 = a^2 \times b^2 \times c^4$$

$\Rightarrow N^2$ can have $(22 + 1)$ OR $(2 + 1)(10 + 1)$ OR $(4 + 1)(6 + 1)$ OR $(2 + 1)(2 + 1)(4 + 1)$ factors i.e., 23, 33, 35 or 45 factors but N^2 cannot have 48 factors.

Choice (D)

12. Going by the choices it can be seen that only square of choice (D) equals $27 - 6\sqrt{6} + 12\sqrt{3} - 6\sqrt{2}$.

Choice (D)

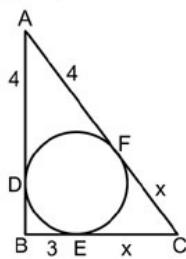
13. If the average (y) of first n terms is considered, then if n is odd, y is also a term of the series and $(x - y)$ will be a multiple of the common difference, i.e., 18. If n is even, then y is the average of two consecutive terms of the series. In which case, the difference $(x - y)$ will be 9 + (a multiple of 18).

In either case the difference $(x - y)$ must be a multiple of 9.

Clearly all the choices except choice (B) are eliminated.

Choice (B)

14. Consider the diagram given below:



Let $CF = x$, $AD = AF$, $CE = CF$, $BE = BD$
(Since A, B and C are external points and AD, AF, BD, BE, CE and CF are tangents)
 $\Rightarrow (4+x)^2 - (3+x)^2 = (4+3)^2$.
 $\Rightarrow 7+2x = 49 \Rightarrow x = 21$
 $AC = 4 + 21 = 25$

Choice (C)

Solutions for questions 15 to 17:

15. From C to K = 0
From K to O = 476
Minimum total cost = Rs.476. Choice (C)
16. The minimum cost is when sending from A to H, 1555 and then H to T = 0
 \therefore Total minimum cost = Rs.1555. Choice (B)
17. Minimum cost is for sending from A to I and then from I to N Rs.2255 + Rs.1572 = Rs.3827. Choice (A)

Solutions for questions 18 to 22:

18. Given

$$f(x) = \frac{2x^2 - 5}{2x^2 + 1} = \frac{2x^2 + 1 - 1 - 5}{2x^2 + 1} = \frac{2x^2 + 1}{2x^2 + 1} - \frac{6}{2x^2 + 1}$$
 $f(x)$ is minimum, if $\frac{6}{2x^2 + 1}$ is maximum.
 $\frac{6}{2x^2 + 1}$ is maximum, if $2x^2 + 1$ is minimum.
 \therefore The minimum value of $2x^2 + 1$ is 1 when $x = 0$
 \therefore The minimum value of $f(x)$ is $1 - \frac{6}{1} = 1 - 6 = -5$

Choice (D)

19. We can observe that both $f(x, y)$ and $g(x, y)$ are always positive for non-zero real numbers x and y . While we cannot conclude anything about their difference, we can definitely say that their sum will be positive. Hence, choice (C) is the right option.

Alternative Solution:

For $x = -2$ and $y = 1$,
 $f(x, y) = 1$ and $g(x, y) = 1$
 \therefore the choices (A), (B) and (D) all yield the value 0.
Hence, choice (C) is the right option. Choice (C)

20. When we have seven runners as mentioned, with A, C, E, G in one direction, with speeds in ratio $1 : 3 : 5 : 7$, and B, D, F in the opposite direction.

A, C meet at $\rightarrow L, \frac{L}{2}$

A, E meet at $\rightarrow L, \frac{L}{4}, \frac{L}{2}, \frac{3L}{4}$

A, G meet at $\rightarrow L, \frac{L}{6}, \frac{L}{3}, \frac{L}{2}, \frac{2L}{3}, \frac{5L}{6}$

When, B, D, F one in opposite to 'A';

The meeting points of A, B are $\rightarrow L, \frac{L}{3}, \frac{2L}{3}$

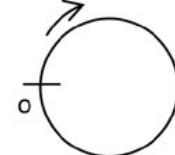
A, D, are $\rightarrow L, \frac{L}{5}, \frac{2L}{5}, \frac{3L}{5}, \frac{4L}{5}$

A, F are $\rightarrow L, \frac{L}{7}, \frac{2L}{7}, \frac{3L}{7}, \frac{4L}{7}, \frac{5L}{7}, \frac{6L}{7}$

Total distinct points 18.

Choice (D)

Note:



'O' is the starting point and L is the length of the track. The details of the meeting points are given below in terms of their distance from O in the clockwise direction in general for the conditions given and the ratio being n : 1, where n is an integer greater than 2.

Case 1: Same direction

The distances of the meeting point from O are $\frac{L}{n-1}, \frac{2L}{n-1}, \dots, \frac{(n-2)L}{n-1}$ and L

i.e., $(n-1)$ meeting points.

Case 2: Opposite direction.

The distances of the meeting point from O are $\frac{L}{n+1}, \frac{2L}{n+1}, \frac{3L}{n+1}, \dots, \frac{nL}{n+1}$ and L

i.e., $n+1$ meeting points.

21. Consider $13 \times 5 = 65 = 2^6 + 1$

First, find the remainder of $\frac{2^{1500}}{65} = \frac{(2^6)^{250}}{2^6 + 1}$, the remainder of which is $(-1)^{250} = 1$

Since the remainder of 2^{1500} , when divided by 65 (which is a multiple of 13, is 1), the remainder when 2^{1500} is divided by 13 will also be 1.

Alternative Solution:

Since, 2 and 13 are co-primes we can apply 'Little Fermat's theorem'

i.e., $\text{Rem}\left[\frac{a^{p-1}}{p}\right] = 1$ where a, p are co-primes.

$\Rightarrow \text{Rem}\left[\frac{2^{13-1}}{13}\right] = \text{Rem}\left[\frac{2^{12}}{13}\right] = 1$.

$\text{Rem}\left[\frac{N}{13}\right] = \left[\frac{2^{1500}}{13}\right] = \left[\frac{(2^{12})^{125}}{13}\right] = 1$ Choice (A)

22. $a : b = 3 : 2 = 6 : 4$

$b : c = 4 : 5$

$c : d = 5 : 6$

$d : e = 6 : 5$

From the above,

$a : b : c : d : e$ is $6 : 4 : 5 : 6 : 5$

$\therefore \frac{ad + ce}{bc + ae} = \frac{(6)(6)+(5)(5)}{(4)(5)+(6)(5)} = \frac{61}{50} = 1.22$

Choice (A)

Solutions for questions 23 to 25:

23. Of the total 155 new connections of February, 103 must have renewed in March. Again in June, compared to the renewed connections of 83 in May, there were 114

renewed connections in June.
 \therefore At least 31 must be newly renewed in June.
 Similarly there must be at least 33 newly renewed connections in August.
 $\text{Total} = 103 + 31 + 33 = 167$ Choice (C)

24. The minimum number of customers who were dissatisfied after just one month was 52 (in march) + 0 (in April, assuming all those who returned the set top box had taken the connection in the previous month) + 0 (similarly in May) and so on i.e., a total of at least 52. Choice (A)
25. The maximum possible number of people who subscribed the connection in February and renewed it through out the offer period is the least value among 103, 99, 83, 114, 95 and 128 i.e. 83. Choice (C)

Solutions for questions 26 to 30:

$$26. 123.01 = (1 \times 4^2 + 2 \times 4 + 3 \times 4^0) + \left(2 \cdot \frac{1}{4} + 1 \cdot \frac{1}{4^2}\right)$$

$$= (16 + 8 + 3) + \left(\frac{1}{2} + \frac{1}{16}\right) = 27 + (0.5 + 0.0625)$$

$$= 27 + 0.5625 = 27.5625 \quad \text{Choice (C)}$$

$$27. S = 1 + \frac{1}{2} + \frac{1}{3} + \dots + \frac{1}{2^{32}}$$

$$\therefore S = (1) + \left(\frac{1}{2}\right) + \left(\frac{1}{3} + \frac{1}{4}\right) + \left(\frac{1}{5} + \frac{1}{6} + \frac{1}{7} + \frac{1}{8}\right) + \dots$$

$$+ \left(\frac{1}{2^{31}+1} + \frac{1}{2^{31}+2} + \dots + \frac{1}{2^{32}}\right)$$

Each term from T_2 onwards in the above series will be greater than the preceding term and also lie between $\frac{1}{2}$ and 1.

$$\Rightarrow \left[1 + \frac{1}{2} + (32 - 1) \frac{1}{2}\right] < S < \left[1 + \frac{1}{2} + (32 - 1)1\right]$$

i.e., S is greater than 17 and less than $32\frac{1}{2}$.

Choice (C)

28. The total age of the couple at their marriage is 60 years. Thirteen years later, this total becomes 86, while the total age of the family (3 members) is 96 years. Therefore, the first child is 10 years old at this stage. When the second child is born at this stage, the average of the two children is 5 years (\because age of the child just born = 0 years). Six years later, this average would become 11 years. Choice (D)

29. Given $f(x) = ax^2 + bx + c$.

$$\text{for } x = -2; f(-2) = 4a - 2b + c < 4 \quad (1)$$

$$\text{for } x = 2; f(2) = 4a + 2b + c > -4$$

$$\text{i.e., } -4a - 2b - c < 4 \quad (2)$$

$$\text{for } x = 3; f(3) = 9a + 3b + c < -11 \quad (3)$$

adding the inequalities (1) and (2) :

$$-4b < 8 \text{ i.e., } b > -2.$$

Adding the inequalities (2) and (3) : $5a + b < -7$

$$\Rightarrow 5a < -7 - b \text{ i.e., } 5a < -5 (\because b > -2)$$

$$\therefore a < -1.$$

Choice (B)

30. Let the G.P. be $a, ar, ar^2, ar^3, ar^4, \dots$

$$\text{Given } a + ar + ar^2 = \frac{26(ar^3)}{1-r} \text{ (i.e., considering any three consecutive terms)}$$

$$\Rightarrow (1 - r)(1 + r + r^2) = 26r^3 \Rightarrow 1 - r^3 = 26r^3$$

$$\Rightarrow 1 = 27r^3 \Rightarrow r = \frac{1}{3}$$

$$\text{Hence the required ratio} = \frac{a}{ar} = \frac{1-r}{r} = 2$$

Choice (D)

Difficulty level wise summary - Section I	
Level of Difficulty	Questions
Very Easy	-
Easy	22
Medium	4, 6, 7, 8, 9, 12, 15, 16, 17, 19, 21, 23, 24, 25, 26, 28
Difficult	1, 2, 3, 5, 11, 13, 14, 18, 20, 29, 30
Very Difficult	10, 27

SECTION – II

Solutions for questions 1 and 2:

1. In choice A, the phrasal verb "stand up" should be used in place of "stand out." "Stand up" means "be plausible or convincing" and is appropriate in the given context. "Stand out" refers to "be conspicuous or prominent." The other choices have the correct usage of the word "stand". In choice C, the reference is to a growth of trees in a particular area. In choice B, the meaning of the idiom "stand in for someone" means "to be a substitute for, replace or represent." In choice D, the idiom "stood his ground" means "to maintain one's position against an attack; to refuse to compromise; be unyielding." Choice (A)

2. In choice B, the usage should be "twist your words" and not "twist you". The usage means "misrepresents, distorts or misquotes (your words)". The other choices have the correct usage of the word "twist". In choice A, the reference is to a type of social dancing in which couples vigorously twist their hips and arms in time to the music. In choice C, the idiom "twist in the wind" means "abandon someone to a bad situation, often as a recipient of blame or to be left to face a difficult situation without support or help." In choice D, the usage refers to the action of "winding, turning, spinning or swivelling". Choice (B)

Solutions for questions 3 to 5:

3. The reference to "Gutenberg Galaxy" is made in the paragraph because Johannes Gutenberg introduced printing to Europe. (The Gutenberg Galaxy: The Making of Typographic Man is a 1962 book by Marshall McLuhan, in which he analyzes the effects of mass media, especially the printing press, on European culture and human consciousness). The Gutenberg Galaxy today refers to the accumulated body of recorded works of human art and knowledge, especially books.

The paragraph compares the computer to a book where there are words and pages. The TV screen has images. In olden times, there was only the classical computer which provided written lines on the screen, allowing reading in a linear fashion. Today there are hypertexts. The penultimate sentence of the paragraph highlights the physical difficulty in accessing different pages of a book. So ideally the last sentence should highlight the advantages of hypertexts over a book. Choice B with the contrast words 'On the contrary' best closes this idea and completes the paragraph. It shows that the nodes in the hypertext network are well connected, allowing easy access to what one is looking for.

Choice A brings in a new thought which the paragraph has not focussed on – that of the hypertexts replacing books and other supports. One would have to introduce the idea of books becoming obsolete. So Choice A runs tangent to

the ideas of 'return to a Gutengerg galaxy' and the paragraph's objective of comparing and contrasting the features of books, television (screens) and hypertexts. Choice C is incorrect as a concluding sentence because it needs both a precedent and more elaboration. There is no perspective as such (realistic or science-fiction), mentioned in the penultimate sentence and the marked differences between visual and alphabetic communication, if any, need to be substantiated. So choice C leaves the thoughtflow incomplete. Choice D also does not link with the penultimate sentence of the paragraph. It goes back in time to talk about the press versus hypertexts, TV images and other electronic devices. It does not provide the difference between books and hypertexts, as the last few lines of the para demand. Also the words "way of thinking", "is on the verge of being substituted...." make this choice an incorrect fit.

Choice (B)

4. The author speaks about the strengths of photographs. In the very first sentence, he states that photographs are a medium that brings us closest to physical suffering or bodily harm. He then says that war results in physical suffering and we need to understand war crimes in real terms rather than in abstract terms. We need to engage in a series of questions and the penultimate sentence speaks about our need to understand the horrific histories, our inheritance. So the concluding sentence must reflect the main idea expressed in the first sentence, the role or value of photographs, by adding to it. This may be an uninspiring approach. If the concluding sentence is not about photographs then the first sentence has no role in the para and it can be entirely about war crimes. So only choice C concludes the thought flow, linking with the penultimate sentence as well. "*sui generis*" means "unique, one of its own kind". "**Those realities**" refer to "the horrific histories" mentioned in the penultimate sentence. Option A is not specific to the content of the given para. The para focuses on the need to "understand" but this choice goes beyond that to speak about "conjuring up emotions" and "analysis of reactions". This choice needs both a precedent and more substantiation. Choice B shifts focus from the use of photographs to the "makers of photographs" and while the latter half of this choice sounds appropriate, the choice runs tangent to the para. The latter part of the choice repeats an idea already presented at the start of the para and the thought of 'victims' is new to the context. Choice D talks about an aspect of photography and not the use of photographs, hence it is incorrect. Also "politics, modernity, mass culture" are too general in the given context. The horrific histories of war crimes need to be understood and this has not been addressed in the choice.

Choice (C)

5. The paragraph is about "educational reform." The term 'public space' refers to the space within which different institutions operate. Under normal circumstances, educational policies are forced down the throats of people. The best institutions formulate policies which the State ask the less excellent institutions to copy. Even if one ignores the elitist angle in this approach, one must realize that there is a lot of diversity in the manner of the functioning of educational institutions and an umbrella or general approach won't do. The resources, demography, goals and options of educational institutions vary greatly. The crux of the paragraph is that institutions cannot copy each other's reform practices and must evolve their own strategies. There are strong words used in the paragraph to indicate this (little sense if the state forces policies...., institutions cannot copy, need to fashion a nuanced approach to the diversity of the public space..., against iconizing...., evolve own strategies....). The objective – fashion a nuanced approach to the diversity of the public spacelearn from each other..... without unhealthily asymmetric long-term dependencies – can be met through debating and evolving of strategies. This will obviously require that individual institutions display a lot of creative energy and a love for change, learning, debating and evolving strategies etc. in

the public space. So the precondition for the objective is stated correctly in choice B. The creative potential of people needs to be realized. If there is copying or passive interaction, there is no expending of the creative energies.

Choice A seems to be a cause for a problem and so there needs to be further discussion. Also the need and importance of understanding the link between imagination and the intellectual content of education require elaboration.

Choice C can be placed before this paragraph in a discussion of who should count as education's customers. It needs further elaboration and cannot conclude the paragraph.

Choice D sounds poetic but cannot conclude the para. This choice is misleading as it has the words "public space" in it. The public space (institutions or academic communities with diverse resources, demography, goals etc.) is already in existence. The arena is what it is. The public space need not be changed. The public space is populated by those who are creating and those who are copying. A nuanced approach to the diversity of the public space (eg. proper direction to take in educational reform) needs refashioning through processes like debating and evolving of strategies. Approaches or processes need to be modified (the practices and policies should not be copied or iconized), not the public space itself.

Choice (B)

Solutions for questions 6 to 8:

From (i), we get the Sphere is made of diamond.

From (ii), we get the Cube is 3rd in weight and 4th in cost i.e., the cost of the Cube is 1000/-.

From (v), we get the Pyramid is green in colour and is manufactured through the process of Moulding. Hence, the Cone is made through the process of Casting.

From (iii), we get the Cube is made of Kryptonite and is manufactured through the process of Cutting. We can infer that the Pyramid is made of Glass and the Cone is made of Wood and is in Black colour.

The final arrangement we get is as follows.

Solid	Colour	Material	Process	Weight	Cost
Sphere		Diamond	Forging		
Cube		Kryptonite	Cutting	2 kg	1000
Pyramid	Green	Glass	Moulding		
Cone	Black	Wood	Casting		

6. If it is given that the solid made of Diamond is the heaviest but is not white then the arrangement we get is as follows

Solid	Colour	Material	Process	Weight	Cost
Sphere	Yellow	Diamond	Forging	4 kg	1 billion
Cube	White	Kryptonite	Cutting	2 kg	1000
Pyramid	Green	Glass	Moulding	3 kg	1 million
Cone	Black	Wood	Casting	1 kg	1 trillion

"The Sphere which is made of Diamond is Yellow in colour and costs Rs.1 billion is definitely true. Choice (C)

7. The Cone is made of Wood and is manufactured through the process of Casting.
This question can be answered directly from the conditions (i), (ii) and (v).

Choice (D)

8. Only the Sphere can be of White colour as the weight and price of the cube are known.
It is also known that the solid manufactured by moulding is not the heaviest, so it must be 3 kg in weight.

Solid	Colour	Weight	Cost
Sphere	White	1 kg	1 trillion
Cube	Yellow	2 kg	1 thousand
Pyramid	Green	3 kg	
Cone	Black	4 kg	

Pyramid cannot be the second costliest solid (From (iv)) since it is already the second heaviest.

∴ Price of cone is ₹1 billion. Choice (C)

Solutions for questions 9 and 10:

Number of words and Explanatory notes for RC:

Number of words : 432

9. Option (A) → There is nothing much critically humorous in the passage which strikes a note.

Option (B) → The passage is not derisive (unkind or displaying contempt).

Option (C) → The passage obviously has a sympathetic tone and highlights the Spaniards' longing for a better tomorrow.

Option (D) → The option doesn't have any relevance to the passage. 'Apologetic' means 'expressing remorse, regret or sorrow'. Choice (C)

10. Statement (a) is not entirely true. While lack of efficient marketing boards and support structures are mentioned in para 3 among other factors like lack of good-quality seeds, lack of enthusiasm among farmers is not a reason. Statement (b) is not true. The farmers are not at all supported by the Nigerian government. The Zimbabwean government gives such support, not the Nigerian government. Statement (c) is true. The passage clearly states the 'non-materialization' of bank finances. Refer to the fifth para. Statement (d) is not true. Though it is true that their homestead was destroyed by guerrilla warfare (last para), they came to Nigeria in response to the invitation of a previous governor. Refer to the penultimate sentence of the third para. Statement (e) has no relationship with the passage. Corruption animates stagnant systems in a jiffy. Now 'corruption may have dominated the world' but the choice does not state how that might have helped people. So only 'c' can be inferred.

Choice (D)

Solution for question 11:

11. In the first sentence, the correct word is 'sanguinary' which means involving or liking killing or liking blood. 'Sanguine' means cheerful and confident about the future. The sentence means that it would be correct to expect a terrorist to like killing or blood – (b). The correct word in the second sentence is 'cohere' which means to work closely together. Adhere means to stick firmly together, cling. In the present context, working on a project is mentioned, hence cohere would be appropriate – (b). In the third sentence, 'adduce' means to provide evidence, reasons, facts etc. 'Deduce' means to form an opinion about something based on the information or evidence. In the context of 'convince', 'adduce' is apt – (b). In the fourth sentence, the correct word is 'addle' which means muddle, confuse somebody. 'Riddle' means to make a lot of holes in something – (b). In the fifth sentence, the correct word is 'emerged' which means to start to exist; to appear or become known. 'Evolve' means to develop gradually, especially from simple to more complicated forms. As truth is mentioned and is supposed to have come to light due to research work, the correct word is 'emerged' – (a). Hence bbbbba. Choice (B)

Solutions for questions 12 and 13:

12. On a close reading of the sentences in the passage, it can be seen that only sentence (c), sentence (e) and sentence (b) sound like introduction sentences. Sentence (a) (....however....), sentence (f) (Thus we shall find it easier...), sentence (d) (...And in the end..) do not serve as introductory sentences as they would need a precedent. Sentence (b) is more of a concluding sentence. Also sentences (e) and (a) are connected. Sentence (e) cannot begin the para as it more specific than sentence (c). So sentence (c) is a general sentence which begins the paragraph. Objects are increasingly transient in the new

society. An example is then given of the ancient Japanese nobility who attached value and symbolism to a flower, serving bowl or obi. 'ea' is a mandatory pair. In earlier times, man's relationship with things was not transient but in the current scenario, man's movement towards a new society questions the permanence of man's relationship with things. "psychologization of manufactured goods" given in sentence (a) connects with surplus meaning, coded symbolism and ritual significance; given in sentence (e). So sentence (c) is followed by sentences (e) and (a). Since the objects become perishable in the movement towards transience, but the psychologization of manufactured goods seems to continue in the new scenario, the inference in statement (f) follows after statement (a). Our services will have more symbolic significance than our products. Statement (d) continues the thoughtflow with reference to the journey towards the new society (And in the end....service economy....). Statement (b) is the concluding sentence of the paragraph. We move beyond products and services to the creation of the most transient yet lasting product, the human experience. So, ceafdb. The other choices disrupt the thoughtflow.

Choice (D)

13. On a close reading of the sentences in the passage, it can be seen that only sentence (e), and sentence (d) can be introduction sentences. Sentence (b) (....this transposition....), sentence (a) (Here, too....), sentence (c) (.... the work..) do not serve as introductory sentences as they would need a precedent. Also sentence (e) is more correct as an introduction sentence because it has the complete reference (individual works of art). Sentence (d) only has the reference (Individual works.....). So (e) is a general sentence which begins the paragraph. "this transposition..." given in sentence (b) is linked with the comparison given in statement (e). So statement (b) follows statement (e). Statement (a) then follows. The "analogous process" in statement (b) is exemplified in statement (a). Also "here too" refers to art. Statements 'adc' in that order continue the thoughtflow. Choice C is wrong because as mentioned earlier, statement (d) cannot begin the para. In choice D, statement (b) is wrongly placed after (a) and statement (c) is wrongly placed before statement (d). Choice A totally disrupts the thoughtflow. Choice (B)

Solution for question 14:

14. The para mentions war and says large numbers had been hit hard. So the apt word to describe the situation is 'deteriorating' (worsening; disintegrating or decaying). There is nothing to suggest 'unprecedented' (never before known or experienced; unparalleled). 'Destruitive' (ruinous) and 'devastating' (to lay waste; destroy, overwhelm; confound) are too strong for the situation. Choice (C)

Solutions for questions 15 to 17:

15. The required configuration is as given below

3	6	9
2	5	8
1	4	7

This can be obtained from the given configuration by first interchanging.

①	②	3
④	5	⑥
7	⑧	⑨

- (i) 1 and 9
(ii) 2 and 6
(iii) 4 and 8
i.e. a total of 3 operations.
to get

9	6	3
8	5	2
7	4	1

Here, each number in the left most column needs to be interchanged with the corresponding number in the rightmost column to arrive at the final configuration. Hence, another three operations.

∴ A total of $3 + 3 = 6$ operations. Choice (C)

16. First consider a 2×2 grid. From any initial configuration, any other configuration can be obtained in a maximum of 3 steps.

Now, consider the 3×3 grid itself. To obtain any configuration we have to arrange 8 of the given numbers in correct position, which will automatically make the 9th number to move into correct position. To get each of these numbers into their correct positions, we need at most one interchange. Hence, 8 operations will be sufficient to obtain any configuration. In general, for $n \times n$ grid, at most $n^2 - 1$ steps (i.e., 1 less than the number of numbers in the grid) are required. If there are a total of 16 numbers, the required answer, as per the above explanation, will be 15.

Choice (C)

17. For x to be minimum the 4×4 grid configuration should be

⑯	⑮	⑭	1
6	5	4	2
9	8	7	3
⑬	⑫	⑪	⑩

All the numbers that are in circles can be arranged among themselves in more than one way.

The required configuration can be obtained by interchanging

- (i) 4 and 6
- (ii) 7 and 9
- (iii) 16 and 1
- (iv) 15 and 2
- (v) 14 and 3

∴ 5 operations are enough to get 3×3 standard grid.

Choice (A)

Solutions for questions 18 and 19:

18. The sentence highlights an important effect of the liberalization of India's economy. We realize, upon reading the sentence, that the first blank is best filled by a synonym of 'inward looking and limited in scope'. That word is 'parochial'. 'Bigoted', meaning, 'intolerant of others' opinions', 'cloistered', meaning, 'confined' and 'conservative' meaning 'favoring traditional views and values'; tending to oppose change' are less appropriate, contextually, than 'parochial'. 'Speckled' also means 'dotted' or having a pattern or arrangement of dots. 'chequered' here means having patterns.

Thus, the answer option is (D) (parochial.....dotted).
Choice (D)

19. 'burlesque' means a ludicrous or mocking imitation; a travesty. But here it refers to a literary work that ridicules a subject either by presenting a solemn subject in an undignified style or an inconsequential subject in a dignified style. 'Humbug' means nonsense, pretense, deceit, fraud. 'elephantiasis' here refers to the gigantic, messy extension or expansion of one's creativity or imagination, which borders on the nonsensical. The first blank can be filled using the clue given in the first line of the sentence – whose fantastic elements nevertheless have some connection with the real world. The use of the conjunctive adverb 'nevertheless' indicates a word opposite to 'real world'. So the best word to fill the first blank is 'metaphysical' which means 'based on speculative or abstract reasoning;

'abstruse.' It also means having the form of an empirical hypothesis, but in fact immune from empirical testing and therefore literally meaningless. The other choices for the first blank are incorrect. 'orthodox' means 'adherence to accepted norms'. 'heterodoxical' refers to the state of being at variance with established doctrines or beliefs. 'Travesty' which means 'an exaggerated or grotesque imitation; false, absurd, or distorted representation' does not collocate with 'burlesque' as both 'burlesque' and 'travesty' mean the same.

'accepted' cannot fill the second blank, given the word 'disregard'. The humbug of the author's imagination is not accepted by others, as the problem of manipulation of people's mind still remains. 'Labyrinthine' can fill the second blank. It means 'something that is extremely complicated or difficult to understand.' Also 'nonconformist' is usually used to describe a person. Only 'humoristic' is correct, given 'metaphysical' for the first blank. 'humoristic' is used to refer to the writer who uses humor skillfully, as in writing.

Choice (B)

Solutions for questions 20 to 22:

Number of words and Explanatory notes for RC:

Number of words : 404

20. Refer to the last para, the words 'unlike other problems' makes choice (A) wrong. Choice (B) is correct only to some extent. It does not answer the question completely. Choice (C) aptly answers the question with valid reasons. The author intends to say that the penny is insignificant in terms of its value but the costs it imposes in transactions in terms of time spent searching for loose change amounts to a lot. This symbolism was used by Obama to allude to the fact that the government is spending time on insignificant things when the same could be devoted to making changes or investing in things that mattered. Choice (D) states that the efforts made to solve other issues are higher than their actual importance, whereas it is not clearly stated how much effort is made.

Choice (C)

21. Statement 'a' is clearly suggested in the passage. Statement 'b' is obviously wrong. In the fourth para, it has been mentioned that merchants would round prices up to the nearest nickel. A nickel is worth 5 cents. Statement 'c' is not possible. Statement 'd' is a stated fact but does not answer the question. Statement (e) would not be a reason for killing the **nickel**. A nickel is worth 5 cents. In the absence of the nickel, there would be a possibility that traders would raise prices to the nearest dime (10 cents) or quarter (25 cents). Statements (b), (c), (d) and (e) are not the reasons.

Choice (A)

22. The American currencies discussed in the passage can be arranged in an increasing order of value as follows: Penny (2 cents), nickel (5 cents), dime (10 cents), quarter (25 cents). The passage implies that the penny does nothing at all to facilitate commerce and one should get rid of it. The government would then save 2 cents for every penny not in circulation. So if one dumped the penny, one would save the cost. With respect to the question, we are not interested in the purchasing power of the penny but the cost that it would save if the penny were dumped.

Now if one dumped the penny and end up not saving the cost, then it would be a contradiction.

Neither the first statement in para 4 nor the second statement in para 4 of the passage offer a determined or clear result.

If one removed the penny, one would have to use the nickel; the price would be marked up or down based on the inconclusive observation given in para 4. (A conditional possibility with 2 outcomes, in one there would be a decreased cost). We are asked for a contradiction. So a clear result or opinion that would provide a contradiction would be the answer, not a possibility. Hence Choice B is not a contradiction. Choice A is not a fact. It is just a possibility and is not a contradiction. Choice (D) is not

supported by the passage. The passage does not mention that the penny is creating "overbearing" problems. The last line of the passage just says that the penny is a metaphor for some of the larger problems we got. Refer to the first para for Choice C. (The money-losing purchase was money itself....). So Choice C is the contradiction in the context of the passage.

Choice (C)

Solution for question 23:

23. In sentence 'a', there is a need for the reflexive pronoun 'herself' and not the objective pronoun 'her'. So, the sentence should read 'saw herself reflected'. In sentence 'b', the sequence of adjectives is incorrect. When two or more adjectives are used before a noun, we normally put those which express opinions or impressions (attractive) before those which express facts (young). Also the sequence of adjectives goes like this: size, age, shape, colour, origin, material, purpose followed by noun. Hence the correction required is 'attractive young woman'. Also it should be 'cool, blue-green light'. Sentence 'c' is correct. In sentence 'd', it should read 'eight, grey ivory elephants'. In sentence 'e', the adverb 'admiringly' needs to be used because it modifies the verb 'gaze'. One cannot use the adjective 'admiring'. The word 'battenburg' needs to be capitalized as it refers to a particular style (of markings). So, only 'c' is correct. The observation 'shimmering' is correctly placed before the adjective 'aquamarine'.

Choice (A)

Solution for question 24:

24. It can be observed on a careful reading of the paragraph that there are three sentences, A, B and C which compare the personoids with humans. Sentence C is the topic sentence of the paragraph. It generalizes a statement of fact. Statements CA form a mandatory pair. Statement A elaborates on the point of comparison (physics of our world, the logic of theirs, does not allow it...). Here 'it' refers to the particular contradiction mentioned in statement C. Sentence B concludes the point about our relationship with the personoids. So, CAB. Sentence D mentions the feature of a solitary personoids without explaining any comparison or contrast with humans and is the odd sentence out.

Choice (D)

Solutions for questions 25 and 26:

25. Neither of the statements alone is sufficient as each has the statements of only one person.
Combining both: If Karan spoke the truth, Johar's statement cannot be true.
 \therefore Karan must have lied.
 \Rightarrow Johar also lied. That means Johar is a thief.
From I, Karan must not be a thief.
Hence, both statements together are sufficient.

Choice (C)

26. Let each person be denoted by the first letter of his name.
From I, let V, U, P get 1, 2, 4 ranks in Sociology (the order of names is not important, as only ranks are required).

	S	V	U	P
Sociology	3	1	2	4
Cosmology	4			
Total	7			

In Cosmology, if V got the 2nd rank, then U and P will get the third and first ranks respectively, in which case the sum of the ranks for them will both be equal to 5.

\therefore P got the 2nd rank in cosmology.

\therefore I alone is sufficient.

Similarly, it can be seen that II alone is also sufficient.

Choice (B)

Solution for question 27:

27. As A, B, D are negative statements, no two of them give a logical conclusion. Also, as A, C and D are particular, no two of them give a logical conclusion. D and E cannot make a logical conclusion, as except the middle term 'square' no term is distributed, which is required in arriving at a

particular negative conclusion. A, E or CE cannot make a logical conclusion as there are four terms in each case. From B, E, no square is a triangle can be concluded. From B, C, some polygons which are triangles are not rectangles is concluded. Hence, there are two pairs of statements BE and BC.

Choice (D)

Solutions for questions 28 to 30:

Number of words and Explanatory notes for RC:

Number of words : 755

28. The first part of choice (A) is confined to the second paragraph and is not the function of the government. The second part of choice (A) is out of scope. Choice (B) is too optimistic, given the limitations in the 4th, 5th and 6th paras of the passage. Choice (D) is well-supported by the second and last sentences of the second para and the last sentence of the passage. Choice (C) cannot be inferred. The author does not enforce this belief. In fact, the author mentions in the fourth sentence of para 2, that governments are unstable because measures are decided by the superior force of an overbearing majority.

Choice (D)

29. (a) is supported by "alarmed for their (popular governments) character and fate" as given in the second sentence of the second para. (b) is supported by "the public good is disregarded" as mentioned in the fourth sentence of the second para and ".....divided mankind into parties, inflamed them with mutual animosity, and rendered them much more disposed to vex and oppress each other than to co-operate for their common good" as given in the second sentence of the last para. (c) is not true. Refer to the first sentence of the sixth para - "faction.....sown in the nature of man." (d) is not supported by the passage. Refer to the last sentence of the penultimate para – From the protection of unequal facilities possession of different interests and parties. So, the factions are the result of the differences in property owned, and not over the acquisitions or the act of acquiring property. Statement (e) is not true. From the last four sentences of the passage (those who hold Necessary operations of the government), it is clear that factions are the result of distinctions between interest groups, and not the overlap of interests and ideologies or the blurring of boundaries between interests and ideologies (as given incorrectly in statement 'e'). Hence (a) and (b).

Choice (B)

30. Refer to the fourth para and the first sentence of the fifth para. Eliminating liberty is "unwise" and without liberty, political life is "impracticable", so both (A) and (B) are true. Choice (D) is supported by "...opinions will be objects to passions" as given in the second sentence of the fifth para. Notice that the phrasal verb 'object to' is used and not 'object of'. The opinions will be objects to which the passions attach themselves. The opinions will serve as poles to which the passions will attach or adhere. 'Object of would relate to something on which an action is done. 'Object of' also means objective or aim. Choice (C) is not a reason. From para 4, we know that liberty is as essential to political life as air is to the animal, and it is from liberty of opinion that distinct interests, opinions and ideologies, and therefore factions, are born. So, the latent causes of faction are sown in the nature of man. It is a bit of a stretch to take this to mean that factionalism itself is an innate part of human nature. While some of the causes may be inherent, they may not, in every case, develop into the effect. The causes may need to interact with other causes and then may lead to factions. So choice (C) is a distortion. If the choice was "The causes of factions are inherent in man" then it would be a reason. So choices (A), (B) and (D) are the reasons.

Choice (C)

Difficulty level wise summary - Section II	
Level of Difficulty	Questions
Very Easy	-
Easy	
Medium	1, 2, 3, 6, 7, 8, 9, 10, 11, 14, 18, 20, 21, 22, 25
Difficult	4, 13, 15, 16, 23, 26, 27, 28
Very Difficult	5, 12, 17, 19, 24, 29, 30