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 and 2:* Answer the questions on the basis of the information given below.

Functions g and h are defined on n constants, $a_0, a_1, a_2, a_3, \ldots\ldots, a_{n-1}$, as follows:

$g(a_p, a_q) = a_{|p-q|}$, if $|p-q| \leq (n-4)$ and

$= a_{n-|p-q|}$, if $|p-q| > (n-4)$

$h(a_p, a_q) = a_k$, where k is the remainder when $p + q$ is divided by n.

1. If $n = 10$, find the value of $g(g(a_2, a_8), g(a_1, a_7))$.
(A) a_9 (B) a_7 (C) a_2 (D) a_0

2. If $h(a_k, a_m) = a_m$ for all m, where $1 \leq m < n$ and $0 \leq k < n$, and m is a natural number, find k.
(A) 0 (B) 1
(C) $n-1$ (D) $n-2$

DIRECTIONS *for questions 3 to 5:* Answer the questions independently of each other.

3. In a bag there are a total of 150 coins in three denominations – ₹1, ₹2 and ₹5 – with at least one coin of each denomination being present in the bag. The total value of the Re.1 coins is at least 50% of the total value of the coins in the bag. If there are 23 ₹5 coins in the bag and the total value of the ₹2 coins is at least 3% of the total value of the coins in the bag, find the number of ₹2 coins in the bag.
(A) 2 (B) 3 (C) 4 (D) 1

4. Let P, Q, S, R, T, U and V represent the seven distinct digits from 0 to 6, not necessarily in that order. If PQ and RS are both two-digit numbers adding up to the three-digit number TUV, find the value of V.
(A) 3
(B) 6
(C) 5
(D) Cannot be determined

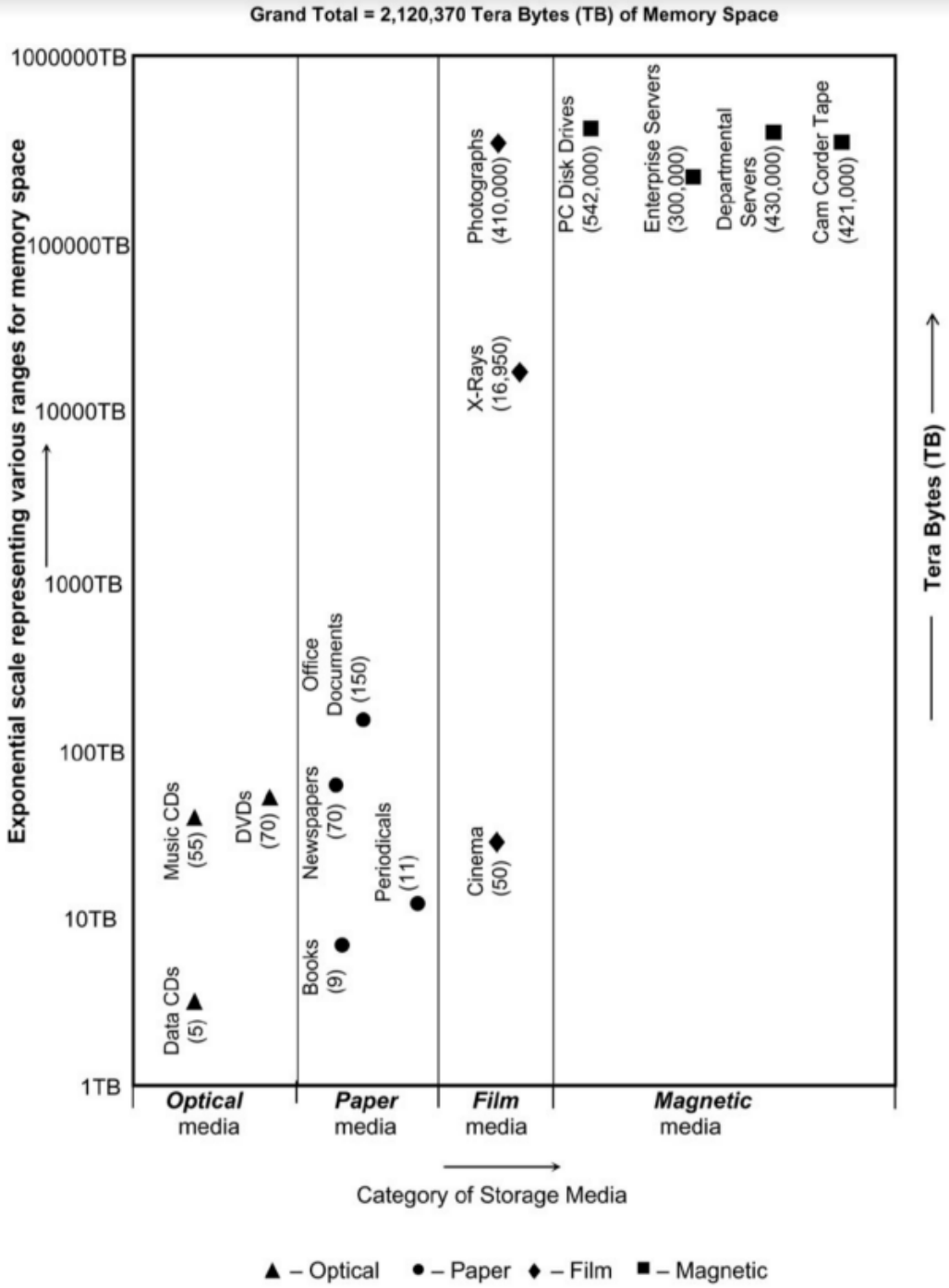
5. There are five cards lying on a table in one row. Five numbers from among 1 to 100 have to be written on them, one number per card, such that the difference between the numbers on any two adjacent cards is not divisible by 4. The remainder when each of the five numbers is divided by 4 is written down on another card, i.e., a sixth card, in that order. How many sequences can be written down on the sixth card?
(A) $2^2 3^3$ (B) $4(3)^4$
(C) $4^2 3^3$ (D) $4^2 3^4$

DIRECTIONS *for questions 6 to 9:* Answer these questions on the basis of the information given in the next page.

6. If the information contained in each X-Ray occupies 30MB of memory space on an average, and by using a new technology each X-Ray is now stored in magnetic media that saves 60% of the memory space required, what is the total amount of memory space of magnetic media that is required to store all the X-Rays available in the year 2000.(1MB = 10^6 Bytes of memory space)
(A) 10,170 TB
(B) 6,780 TB
(C) 1,703,170 TB
(D) None of these

7. The information stored in Newspapers, Books and Periodicals forms what percentage of the total information stored on paper media? Assume that the information stored per unit memory space occupied is the same for all the media mentioned.
(A) 37.5%
(B) 45%
(C) 57%
(D) 54%

Summary of the estimate of memory space occupied by the information worldwide, stored in various storage media, in the year 2000



In the above graph, for any media of information storage, the figures in the brackets denote the amount of memory space occupied by the information stored worldwide in that media of information storage. For example, the memory space occupied by the information contained in Music CDs worldwide is 55 TB.

Note : (i) 1 Tera Byte (TB) of memory space = 10^{12} Bytes of memory space.
(ii) All storage media are classified into four categories – Optical, Paper, Film and Magnetic.

8. When compared to the total memory space occupied by the information stored in any single category of storage media, what is the highest percentage share of memory space occupied by the information stored in any single media within that category (approximately)?
(A) 68.75% (B) 62.5%
(C) 96% (D) 98.3%

9. Due to advances in technology, the information stored per unit memory space occupied worldwide increases by 20% every year, while the total memory space available worldwide increases at the rate of 10% every year. If in the year 2000, 80% of the memory space available worldwide is occupied by the information available worldwide, and the information available worldwide were to increase by 45% every year, then which of the following years is the earliest by which there will be a shortage of memory space?
(A) 2002 (B) 2003 (C) 2004 (D) 2005

DIRECTIONS *for questions 10 to 15:* Answer the questions independently of each other.

10. a, b and c are the lengths of the sides of the triangle ABC and d, e, and f are the lengths of the sides of the triangle DEF. If the following equations hold true:
$a(a + b + c) = d^2$
$b(a + b + c) = e^2$
$c(a + b + c) = f^2$
then which of the following is always true of triangle DEF?
(A) It is an acute-angled triangle.
(B) It is a right-angled triangle.
(C) It is an obtuse-angled triangle.
(D) None of the above

11. Sujith looked at the six-digit number on his CAT admit card and said "If I multiply the first two digits with three, I get all ones. If I multiply the next two digits with six, I get all twos. If I multiply the last two digits by 9, I get all threes". What is the sum of the digits of the number on Sujith's admit card?
(A) 30 (B) 33 (C) 60 (D) 45

12. Two cars P and Q start from two points A and B towards each other simultaneously. They meet for the first time 40 km from B. After meeting they exchange their speeds as well as directions and proceed to their respective starting points. On reaching their starting points, they turn back with the same speeds and meet at a point 20 km from A. Find the distance between A and B.
(A) 130 km (B) 100 km
(C) 120 km (D) 110 km

13. Consider the following two curves in the XY plane:
$y = 2x^3 + 3x^2 + 4$ and
$y = 3x^2 - 2x + 8$

Which of the following statements is true for $-3 \le x \le 2$?
(A) The two curves intersect thrice.
(B) The two curves intersect twice.
(C) The two curves intersect once.
(D) The two curves do not intersect.

14. A cuboidal aquarium, of base dimensions 100 cm × 80 cm and height 60 cm, is filled with water to its brim. The aquarium is now tilted along one of the 80 cm edges and the water begin to spill. The tilting is continued till the water surface touches a line on the base which is at a distance of one-third of the length from (and parallel to) the edge on which the aquarium is being tilted. Now the box is returned to its original position. By how many centimetres has the height of water reduced?
(A) 50 (B) 40 (C) 20 (D) 10

15. Some persons are standing at distinct points on a circle, all facing towards the centre. Each possible pair of persons who are not adjacent sing a three-minute song, one pair after another. If the total time taken by all the pairs to finish singing is 1 hour, find the number of persons standing on the circle.
(A) 5 (B) 7 (C) 9 (D) 8

DIRECTIONS *for questions 16 and 17:* Answer these questions on the basis of the information given below.

In a triangle PQR, PQ = 12 cm and PR = 9 cm and $\angle Q + \angle R = 120°$.

16. Find the length of QR.
(A) $\frac{15}{\sqrt{2}}$ cm (B) $3\sqrt{13}$ cm
(C) $5\sqrt{5}$ cm (D) $5\sqrt{17}$ cm

17. If the angle bisector of $\angle P$ meets QR at M, find the length of PM.
(A) $\frac{28\sqrt{5}}{9}$ cm
(B) $\frac{42\sqrt{5}}{11}$ cm
(C) $\frac{36\sqrt{3}}{7}$ cm
(D) $4\sqrt{3}$ cm

DIRECTIONS *for questions 18 to 21:* Answer these questions on the basis of the information given below.

The following is the table of points drawn at the end of all the matches in a six-nation Hockey tournament, in which each country played with every other country exactly once. The table gives the positions of the countries in terms of their respective total points scored (i.e., in the decreasing order of their total points). Each win was worth three points, each draw one point, and there were no points for a loss. Some information in the table has been intentionally left out. The results of none of the individual matches are known, except that Pakistan beat India and no two teams finished with the same number of points.

Position	Country	Won	Drawn	Lost	Goals For	Goals Against	Total Points
1	Australia				17	5	15
2	Netherlands				9	6	10
3	Pakistan					2	8
4	India				2	5	
5	South Korea				7	11	2
6	Spain				8	16	

18. Which of the following matches was a draw?
(A) India Vs South Korea
(B) Spain Vs Netherlands
(C) Netherlands Vs South Korea
(D) Spain Vs South Korea

19. The total number of points won by India is
(A) 5
(B) 6
(C) 7
(D) Cannot be determined

20. The total number of goals scored in the match between Netherlands and Pakistan is
(A) 0
(B) 1
(C) 2
(D) Cannot be determined

21. The number of goals scored by Australia against India is at most
(A) 5 (B) 4 (C) 3 (D) 2

DIRECTIONS *for questions 22 to 30:* Answer the questions independently of each other.

22. Outside a sweet shop, its name "Madhu Sweet House" is displayed using blinking lights. Each word flashes at a regular interval and remains lit for 1 second. After remaining lit for 1 second, "Madhu" remains unlit for $3^1/_2$ seconds, "Sweet" remains unlit for $5^3/_4$ seconds and "House" remains unlit for $9^1/_8$ seconds. If all the words flash together at 8:00 p.m. sharp, find the time interval between the next time the first two words flash together and the next time the last two words flash together.
(A) 45 seconds (B) 22.5 seconds
(C) 112 seconds (D) 6.75 seconds

23. If $g(x) = p|x| - qx^2$, where p and q are constants, then at $x = 0$, $g(x)$ will be
(A) maximum when $p > 0, q > 0$.
(B) minimum when $p < 0, q < 0$.
(C) minimum when $p > 0, q < 0$.
(D) maximum when $p > 0, q < 0$.

24. A television company manufactures two models of televisions – A and B. Each unit of model A requires four hours to manufacture and each unit of model B requires two hours to manufacture. The total time available in a month to manufacture these two models is 1600 hours. The profits generated on selling each unit of model A and each unit of model B are ₹1200 and ₹1000 respectively. Find the number of units of each of model A and model B televisions to be manufactured to maximize the profit.
(A) 200 model As and 600 model Bs
(B) 800 model As
(C) 800 model Bs
(D) None of the above

25. The age of a son, who is more than two years old, is equal to the units digit of the age of his father. After ten years, the age of the father will be thrice the age of the son. What is the sum of the present ages of the son and the father?
(A) 30 years (B) 36 years
(C) 40 years (D) Cannot be determined

26. Given that $-3 < x \le -1/2$ and $1/2 < y \le 7$, which of the following statements is true?
(A) max $[(x + y)(x - y)]$ – min $[(x + y)(x - y)] = 57^1/_2$
(B) max $[(x + y)^2] = 169/4$
(C) min $[(x - y)^2] = 1$
(D) All of the above

27. Each side of a polygon is either parallel to the x-axis or parallel to the y-axis. A corner of the polygon is known as convex if the corresponding internal angle is 90° and as concave if the corresponding internal angle is 270°. If the polygon has 26 convex corners, the number of its concave corners is
(A) 18 (B) 22 (C) 26 (D) 24

28. The density of a liquid is defined as the weight per unit volume of the liquid. The densities of two liquids A and B are in the ratio 2 : 1. The liquid B evaporates at a rate (in kg/hr) which is twice as fast compared to that of liquid A, which evaporates at a rate of 1 kg/hour. If 70 kg of liquid A is mixed with 30 kg of liquid of B to form a mixture, find the number of hours the mixture needs to be evaporated so that the density of the resultant mixture is 1.04 times that of the original mixture. Assume that there is no chemical reaction between the liquids.
(A) 2.5 (B) 3 (C) 3.5 (D) 4

29. Let $f(x) = \frac{x}{1+x^2}$ and $g(x) = \frac{e^{-x}}{1+[x]}$, where $[x]$ is the greatest integer less than or equal to x. Then which of the following is true?
I. domain of $(f + g) = R - (-2, -1]$
II. domain of $(f + g) = R - [-1,0)$
III. [range of f] $\cap$ [range of g] $= \left[-2, \frac{1}{2}\right]$
IV. [range of f] $\cap$ [range g] $= \left[\frac{-1}{2}, \frac{1}{2}\right] - \{0\}$
(A) Both II and IV (B) Both I and III
(C) Both I and IV (D) Both II and III

30. The line L passing through the points (1, 1) and (2, 0) meets the y-axis at A. The line through the point $\left(\frac{1}{2}, 0\right)$ and perpendicular to L meets the y-axis at B and L at C. Find area of the triangle ABC.
(A) $\frac{25}{16}$ (B) $\frac{16}{9}$ (C) $\frac{32}{19}$ (D) $\frac{40}{23}$

SECTION – II
Number of Questions = 30

DIRECTIONS *for question 1:* 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 the context.

1. (A) But as access to other texts is enjoyed more widely, some of the dominance textbooks now enjoy will wane.
(B) As indeed will the power of teachers—whose prejudices may often be just as ingrained as those found in textbooks, and rather harder to pin down.
(C) It won't be long before children, will be able to access, by way of smartphones, the textbooks prescribed for their courses.
(D) As long as textbooks in one form or another are used and as long as they are issued or approved by the state, they will remain a political issue.

DIRECTIONS *for questions 2 to 5:* Read the following passage and answer the questions that follow it.

Psychotherapeutic processes deal with psychological problems, ranging from mild ones like a depressed mood, to more subtle ones like interpretation of dreams to more controversial problems like dissociative identity disorder. Denied emotions (not admitting or voicing one's emotions to the therapist) is a root cause of many psychological problems as honest communication is the numero uno factor for the psychotherapeutic process to work. Emotional honesty can be a difficult task for the client or patient.

Psychotherapists make analysis of dreams a significant part of their work. It is tempting to wish petulantly that the unconscious would speak to us more clearly as significance of many dreams eludes us. But dreams that can be interpreted provide helpful information like warnings of personal pitfalls; solution guides to problems; sources of necessary information and judgement; as direction-finders when we feel lost; as pointers to the way we need to go when we are floundering and the message always seems to be one designed to nurture spiritual growth.

The unconscious may communicate to us when we are awake with as much elegance and beneficence as when we are asleep, although in a slightly different form of 'idle thoughts' or even fragments of thought. As with dreams, we pay these idle thoughts no attention and cast them aside as insignificant. Hence patients in psychoanalysis are instructed to say everything, however insignificant, that comes in their minds. Idle thoughts provide us with insight into ourselves and others.

The seemingly alien and unwanted quality is characteristic of unconscious material and its manner of presentation to the conscious mind. This and the associated resistance of the conscious mind led Freud to perceive the unconscious as a repository of the primitive, the antisocial and the evil within us. He tended to assume that mental illness somehow resided in the unconscious as a demon in the subterranean depths of our mind. To Carl Jung fell the responsibility of correcting this which he did through his work "The Wisdom of the Unconscious." As he concluded, mental illness is not a product of the unconscious but a phenomenon of consciousness or a disordered relationship between conscious and unconscious. Consider the matter of repression. Freud discovered in his patients sexual desires and hostile feelings of which they were unaware but which were making them ill. Because these desires and feelings resided in the unconscious, the notion arose that it was the unconscious that caused mental illness. But why were these desires and feelings in the unconscious in the first place? Why were they repressed? The answer is that the conscious mind did not want them. And it is in this not wanting, this disowning, that the problem lies.

2. A major difference between the points of view expressed by Freud and Jung as discussed in the passage is

(A) One considered ailments of the mind to be the result of conflict between the conscious and the unconscious, while the other considered them to be inherent in the unconscious.

(B) One considered that ailments of the mind are grounded in the conscious, while the other considered them to be triggered by the unconscious.

(C) One considered that the evil qualities of human beings reside in their unconscious mind, while the other considered that the unconscious mind repressed desires and feeling.

(D) One considered that ailments of the mind are grounded in the unconscious, while the other considered them to be triggered by the conscious.

3. Which of the following statements are logically consistent with the content of the paragraph?

(I) Idle thoughts can sometimes illuminate the situation of the person as valuable messages from the unconscious can be received.

(II) Emotionally dishonest clients are very poor communicators and suffer from psychological problems.

(III) Dissociative identity disorder is primarily due to denied emotions.

(IV) Dreams can help effect, in us, better understanding, and development, of the spirit within.

(V) Honest communication and open interaction can positively influence a psychotherapeutic decision.

(A) I, III, IV, V (B) I, IV, V
(C) I, II, IV (D) II, IV, V

4. If a paragraph were to be inserted between the first and the second paragraphs, it would most likely deal with which of the following?

(A) Dreams can be instrumental in gauging a person's emotional state.

(B) Emotions are, very often, the substance of a person's idle thoughts.

(C) It is very difficult to gauge emotional honesty.

(D) Dreams, often, are indicative of emotions that remain unexpressed.

5. In saying "It is tempting to wish petulantly that the unconscious would speak to us more clearly".... (in para 2) the author wishes to indicate that

(A) the inability to understand the unconscious can irritate psychotherapists when pursuing their objectives.

(B) the inability to understand the unconscious can puzzle psychotherapists in pursuit of their objectives.

(C) the inability to understand the unconscious can frustrate psychotherapists when pursuing their objectives.

DIRECTIONS *for question 9:* 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 and usage. Then, choose the **most appropriate** option.

9. (a) Leonardo da Vinci was a self-taught man and began teaching himself Latin at the early age.

(b) He became a great engineer and was the first to discover that blood circulated through the body.

(c) He believed that coarse people of bad habits and shallow judgments did not deserve so beautiful an instrument and such a complex anatomical equipment than the human body.

(d) They should merely have a sack for taking in food and letting it out again, for they are nothing but the alimentary canal.

(e) Very fond of animals, he was himself a vegetarian and had the habit of buying caged birds from the market and setting them free immediately.

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

(D) the inability to understand the unconscious can divert psychotherapists from their objectives.

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

Each of nine persons, P, Q, R, S, T, U, V, W and X, lives in a different flat in an apartment building, which has six floors (excluding the ground floor, which is used only for parking) and three flats on each floor. The three flats on each floor are in a row and no two adjacent flats on a floor are occupied. At least one person lives on each floor.

Further the following information is known:
(i) P and Q live on the same floor.
(ii) R and S live on different floors.
(iii) T lives in the middle flat on the fourth floor.
(iv) U lives on the sixth floor and V lives on the first floor.
(v) W lives on the floor which is immediately above the floor on which X lives.

6. If W and U do not live on the same floor, then which of the following cannot be true?
(A) W lives on the third floor.
(B) Q lives on the third floor.
(C) R lives on the second floor.
(D) P lives on the second floor.

7. If S and R are living on the first floor and the sixth floor respectively, then which of the following must be true?
(A) T is living on the same floor as X.
(B) Q is living on the second floor.
(C) P is living on the third floor.
(D) W is living alone on his floor.

8. If Q lives on the third floor, then how many combinations of persons could live on the second floor?
(A) 8 (B) 6 (C) 5 (D) 7

DIRECTIONS *for question 10:* The sentences given in the following question, when properly sequenced, form a coherent paragraph. Each sentence is labelled with a letter. From among the four choices given below the question, choose the most logical order of sentences that constructs a coherent paragraph.

10. (a) Although thoughts are primary, thoughts in themselves have no method of transmission and are therefore dependent on speech.
(b) If we were to summarize the logo-centric approach to meaning, we should state that what emerges is that speech is the original signifier of meaning.
(c) Language, the cornerstone of humanity, emerges as a process to allow our thoughts to travel across space and between people.
(d) Language can then be viewed as a system of verbal signs that signify individual thought.
(e) Language produces speech to transmit thoughts and writing to transmit speech.
(A) cabed (B) baced
(C) beacd (D) caedb

DIRECTIONS *for question 11:* In the following question, the word in capitals is used in four different ways. Choose the option in which the usage of the word is INCORRECT or INAPPROPRIATE.

11. MELT
(A) The crowd melted away after the prayer meeting.
(B) Even the sternest mother's heart melts at the sight of her baby crying.
(C) His anxiety melted away when he received an SMS from his daughter confirming that she had reached her destination safely.
(D) The cries of opposition suddenly melted to cheers when the principal agreed to the demands of the students.

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

12. (a) Generally speaking, in pre-capitalist societies people produced things directly for other people, not for sale on a market – in Marx's language, they produced for use, not exchange.
(b) However, producing things for sale (or exchange) creates a new dynamic, different from societies that produce directly for use.
(c) Capitalism is very different from past modes of production.
(d) Under capitalism, nearly all of the products of human labor are commodities, that is, they are produced for sale.
(e) Every system of production has to regulate how much of people's labor is spent producing one thing versus another, so that society does not expend labor on things that are useless.
(f) Marx called this "generalized commodity production" – people obtain their needs and wants by purchasing them on a market, and people produce what other people need and want by selling things on a market.

(A) dfbeac (B) abcdef
(C) eacdfb (D) cdfabe

DIRECTIONS *for questions 13 to 15*: Answer the questions on the basis of the information given below.

Four friends – John, Mike, Lewis and Peter – went on a picnic and they participated in four adventure sports – Paragliding, Skiing, Bungee Jumping and Rock Climbing. Further, the following information is known about them:

(i) The number of persons who participated in Skiing is one more than that of those who participated in Bungee Jumping, which, in turn, is same as that of those who participated in Paragliding, which, in turn, is twice that of those who participated in Rock Climbing.
(ii) Every person participated in at least one event and each sport was taken up by at least one person.
(iii) John participated in Skiing but not in Rock Climbing while Lewis participated in Bungee Jumping but not in Paragliding.
(iv) None of them participated in both Bungee Jumping and Rock Climbing.
(v) Peter participated in three sports.
(vi) Between Skiing and Paragliding, Mike participated in exactly one sport.

13. If Lewis participated in two sports, which of the following is ***definitely false***?
(A) Mike did not participate in Skiing.
(B) John participated in Paragliding.
(C) Lewis participated in Skiing.
(D) Mike participated in Paragliding.

14. If John participated in Paragliding, which of the following statements is ***definitely true***?
(A) Mike participated in Rock Climbing.
(B) John Participated in Bungee Jumping.
(C) Lewis did not participate in Skiing.
(D) Peter did not participate in Rock Climbing.

15. Which of the following is ***not*** a possible combination of number of sports taken up by John, Mike and Lewis?
(A) John – 1, Mike – 2, Lewis – 2
(B) John – 3, Mike – 1, Lewis – 1
(C) John – 1, Mike – 3, Lewis – 1
(D) John – 2, Mike – 2, Lewis – 1

DIRECTIONS *for question 16*: Select the correct alternative from the given choices.

16. Eight men have their first names, as Ratan, Rama, Ramesh, Ramu, Rakesh, Rajan, Rishabh and Rohit and their surnames are Kulkarni, Arora, Jain, Dutta, Singh, Sharma, Sen and Murthy, not necessarily in the same order. These eight persons are sitting around a circular table as per the following instructions:
(i) Ramu is sitting opposite Kulkarni and to the left of Singh.
(ii) Rajan is sitting opposite Sharma and next to Murthy, who is sitting to the left of Rama.
(iii) Arora is sitting opposite Ratan and Rohit sits adjacent to Dutta.
(iv) Rama, who is next to Rishabh and Ramesh, sits opposite Sen.

If Rishabh Arora sits between Kulkarni and Sharma, and opposite Singh, then who sits opposite Rakesh Dutta?
(A) Ramesh Murthy (B) Rama Murthy
(C) Rajan Jain (D) Rishabha Arora

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(A) Ramesh Murthy (B) Rama Murthy
(C) Rajan Jain (D) Rishabha Arora

DIRECTIONS *for questions 17 to 19:* Read the following passage and answer the questions that follow it.

"SOVEREIGN in tastes, steely-eyed and point-on in perception of risk, and relentless in maximisation of happiness." This was Daniel McFadden's memorable summation, in 2006, of the idea of Everyman held by economists. That this description is unlike any real person was Mr.McFadden's point. The Nobel prizewinning economist at the University of California, Berkeley, wryly termed *homo economicus* "a rare species". In his latest paper he outlines a "new science of pleasure", in which he argues that economics should draw much more heavily on fields such as psychology, neuroscience and anthropology. He wants economists to accept that evidence from other disciplines does not just explain those bits of behaviour that do not fit the standard models. Rather, what economists consider anomalous is the norm. *Homo economicus*, not his fallible counterpart, is the oddity.

To take one example, the "people" in economic models have fixed preferences which are taken as given. Yet a large body of research from cognitive psychology shows that preferences are in fact rather fluid. People value mundane things much more highly when they think of them as somehow "their own": they insist on a much higher price for a coffee cup they think of as theirs, for instance, than for an identical one that isn't. This "endowment effect" means that

people hold on to shares well past the point where it makes sense to sell them. Cognitive scientists have also found that people dislike losing something much more than they like gaining the same amount. Such "loss aversion" can explain why people often pick insurance policies with lower deductible charges even that they are more expensive. At the moment of an accident a deductible feels like a loss, whereas all those premium payments are part of the status quo.

Such tools have implications for policy. Plenty of poor people in America are wary of programmes like the Earned Income Tax Credit (EITC) because the idea of getting a handout from the government reinforces a sense of helpnessness. Dignity is not something mainstream economics has much truck with. But creating a sense of dignity turns out to be a powerful way of affecting decisions. One study by Crystal Hall, Jiaying Zhao and Eldar Shafir, a trio of psychologists, found that getting poor people in a soup kitchen to recall a time when they felt "successful and proud" made them almost twice as likely to accept leaflets that told them how to get an EITC refund than members of another group who were merely asked about the last meal they had eaten.

Taking the path Mr.McFadden urges might also lead economists to reassess some articles of faith. Economists tend to think that more choice is good. Yet people with many options sometimes fail to make any choice at all: think of workers who prefer their employers to put them by "default" into pension plans at preset contribution rates. Explicitly modelling the process of making a choice might prompt economists to take a more ambiguous view of an abundance of choices. This is undoubtedly messier than standard economics. So is real life.

17. Which of the following most accurately represents the author's criticism of 'Homo economicus'?
(A) It gives an inaccurate picture of consumer behaviour in real economic transactions.
(B) The ideal person who makes choices in conservative economic models is, in fact, the opposite of 'homo economicus".
(C) It is nowhere close to the unpredictable consumer in real economic situations.
(D) It is the economists' mythical Everyman.

18. The author of the passage mentions the observations of Hall, Zhao and Sharif in order to
(A) demonstrate that people take pride in their achievements even in hard times.
(B) demonstrate how empathy can play a significant role in persuasion.
(C) provide support for the assertion that dignity is a powerful factor in decision-making.
(D) illustrate that authorities would be able to implement policies more effectively if they understand their citizens.

19. The view mentioned in the last paragraph ("Taking the path… real life") refers to which of the following?
(A) People are loath to make any choice when faced with a plethora of options.
(B) Consumers prefer to seek expert guidance while making a choice.
(C) Employers coax workers to accept pension plans with fixed contribution rates.
(D) The view that more choice is good for consumers should be regarded with skepticism.

DIRECTIONS *for question 21:* The following question 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.

21. The scientist and the artist are both concerned to change the world – the one the external world of man's objective relations with nature, the other the internal world of his subjective relations with his fellow men. The scientist discovers a contradiction in his consciousness of the external world and resolves it in a scientific hypothesis: the artist discovers a contradiction in his consciousness of the internal world and resolves it in a work of art. Both are creative acts. The scientist extends our knowledge and hence also our control of nature._____
(A) The artist takes complex explanations and renders them simple.
(B) In doing so, he proves that there is nothing we cannot do - everything is brought within our reach.
(C) The artist heightens our sense of ourselves as social beings and so advances the class struggle.
(D) The artist teaches us to think for ourselves.

DIRECTIONS *for question 22:* In the following question, the word in capitals is used in four different ways. Choose the option in which the usage of the word is INCORRECT or INAPPROPRIATE.

DIRECTIONS *for questions 23 to 25:* Read the following passage and answer the questions that follow it.

Marcel Proust (1871-1922) was immensely well read. "In Search of Lost Time" encapsulates within itself the main traditions in French literature: both in fiction (from Madame de Lafayette through Stendhal, Balzac, Flaubert and Zola) and in the bellelettristic-philosophical line (from Montaigne through Pascal, La Rochefoucauld and Chamfort). Proust formed a strong taste for generalization through these latter writers. I own a small book of his maxims, drawn from the novel and his discursive writings, and an unusually high quotient of them are dazzling. Let one example suffice: "It has been said that the greatest praise of God lies in the negation of the atheist, who considers creation sufficiently perfect to dispense with a creator."

As an asthmatic child, Proust read more than most children. By the age of 15, he was already immersed in contemporary literature, having read the essays and novels of Anatole France and Pierre Loti, the poetry of Mallarme and Leconte de Lisle, and a number of the novels of Dostoyevsky, Tolstoy, Dickens and George Eliot. Unlike Henry James, who referred to their works as "baggy monsters," Proust fully appreciated the great Russian novelists. He thought Tolstoy "a serene god", valuing especially his ability to generalize in the form of setting down laws about human nature. For Proust, Dostoyevsky surpassed all other writers, and he found "The Idiot" the most beautiful novel he had ever read. He admired Dostoyesky's skill with sudden twists in plot, providing the plausible surprises that propelled his novels.

In his 1905 essay "On Reading," a key document in Proust's freeing himself to write his great novel, he quoted Descartes: "The reading of all good books is like a conversation with the most cultivated of men of past centuries who have been their authors." Proust's examination of "the original psychological act called "reading," that "noblest of distractions." He stated that reading is superior to conversation, which "dissipates immediately."

A book, he felt, is "a friendship… and the fact that it is directed to one who is absent, gives it something disinterested, almost moving." Books are actually better than friends, Proust thought, because you turn to them only when you truly desire their company and can ignore them when you wish, neither of which is true of a friend. One also frequently loves people in books, "to whom one had given more of one's attention and tenderness [than] to people in real life." In his own novel, Proust wrote. "Real life, life at last laid bare and illuminated—the only life in consequence which can be said to be really lived—is literature."

23. In the passage the author is primarily concerned with?
(A) critically examining Proust's "In Search of Lost Time."
(B) providing a synopsis of Proust's reading tastes.
(C) evaluating Proust's position in the great literary tradition.
(D) discussing the intellectual influence Proust's contemporaries had on his works.

24. The author quotes an example of Proust's maxims to highlight his (Proust's)
(A) grasp of the metaphysical.
(B) penchant for the philosophical.
(C) belief in a Supreme Being.
(D) exceptional choice of thought and word.

25. The passage implies that Proust subscribes to which of the following views?
(a) Reading a good book is like having a conversation with a classical writer.
(b) Reading is a virtuous pastime and it leaves an indelible impression on one's mind.
(c) Literature imitates life.
(d) A reader can invest in the feelings for characters in a book.
(e) Dostoyevsky's "The Idiot" was appreciated by him for the unanticipated turns in the plot.
(f) Dostoyevsky's "The Idiot" was known for its aesthetics, its gripping pace and its unlikely element of surprise.
(A) a, c, d, e (B) a, e, f
(C) a, b, c, e (D) a, b, c, d, e

DIRECTIONS *for questions 26 to 29:* These questions are based on the following information.

There are ten boxes, numbered 1 to 10, each containing *g* gold coins. Each of the coins in nine of these ten boxes weighs 10 gm, whereas each of the coins in the tenth box weighs 20 gm. A digital weighing machine is provided. Now, a logician, Mr.Kapil, is invited. The task assigned to him is that he has to find out the box containing the coins weighing 20 gm each.

26. If $g = 9$, then what is the minimum possible number of times for which the weighing machine is to be used?
(A) 1 (B) 2 (C) 3 (D) 4

27. If $g = 7$, what is the minimum possible number of times for which the weighing machine is to be used?
(A) 1 (B) 2 (C) 3 (D) 4

28. If $g = 3$, what is the minimum possible number of times for which the weighing machine is to be used?
(A) 3 (B) 2 (C) 5 (D) 4

29. If $g = 2$, what is the minimum possible number of times for which the weighing machine is to be used?
(A) 2 (B) 3 (C) 5 (D) 4

DIRECTIONS *for question 30:* 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 the context.

30. (A) The trade in iron ore makes it the second-largest commodity market by value after crude oil.
(B) The metal provides the backbone of skyscrapers, bridges and motorways, and the carapace and internal organs of cars, fridges and washing machines.
(C) Given steel's ubiquity – it makes up 95% of global metal production – iron ore, the raw material from which it is made, attracts strangely little attention.
(D) The development of a process to turn raw earth into steel merits a high spot on a list of mankind's most ingenious achievements.