T.I.M.E.
Triumphant Institute of Management Education Pvt. Ltd

AIM CAT
(All-India Mock CAT)

(Test Ref.: AIMCAT1210)

INSTRUCTIONS

1. Read the instructions given at the beginning/end of a section or group of questions very carefully.

2. The test has two sections, I and II. The time available for each section is 70 minutes. You cannot return to section I once you have started to answer section II.

3. **Pattern of the test and marking scheme**

Section	Number of questions	Marks per question	Negative marks
Quantitative Ability + Data Interpretation	30	3	1
Verbal Ability + Logical Reasoning	30	3	1
Total	60	–	–

4. You are expected to show your competence in both the sections.

5. Each wrong answer will attract a penalty of one mark.

6. There are no negative marks for unattempted questions.

7. You can navigate to any question of your choice within a section.

8. During the test, you can mark questions for review and return to them at a convenient time.

9. An answer once marked can be changed any number of times before submitting the test. However the last marked answer will be considered as the final answer.

10. Do not carry calculators, slide rules or any other calculating devices. Do not carry any other papers with you except your HALL TICKET. Rough papers for calculations will be provided.

Share your views on this AIMCAT with thousands of other test takers on "talktime"

www.time4education.com/talktime

T.I.M.E.
Triumphant Institute of Management Education Pvt. Ltd

T.I.M.E.
Triumphant Institute of

Ref: AIMCAT1210

INSTRUCTIONS

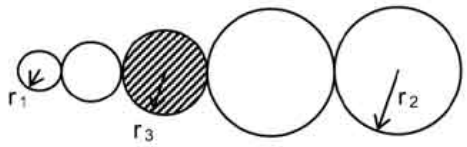
1. Read the instructions given at the beginning/end of each section or at the beginning of a group of questions very carefully.
2. This test has two sections with 60 questions – 30 questions in each section. The TOTAL TIME available for the paper is **140 minutes**. The time available for each section 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. If $\log_2(x^y + y^4 - 41) = 8$, where x and y are positive integers, then the value xy^3 can be
(1) 216 (2) 162
(3) 192 (4) None of these

2.



The five circles shown above have two direct common tangents. If $r_1 = 8$ cm, $r_2 = 18$ cm, find r_3.
(1) 12 cm (2) 12.5 cm
(3) 13 cm (4) 13.5 cm

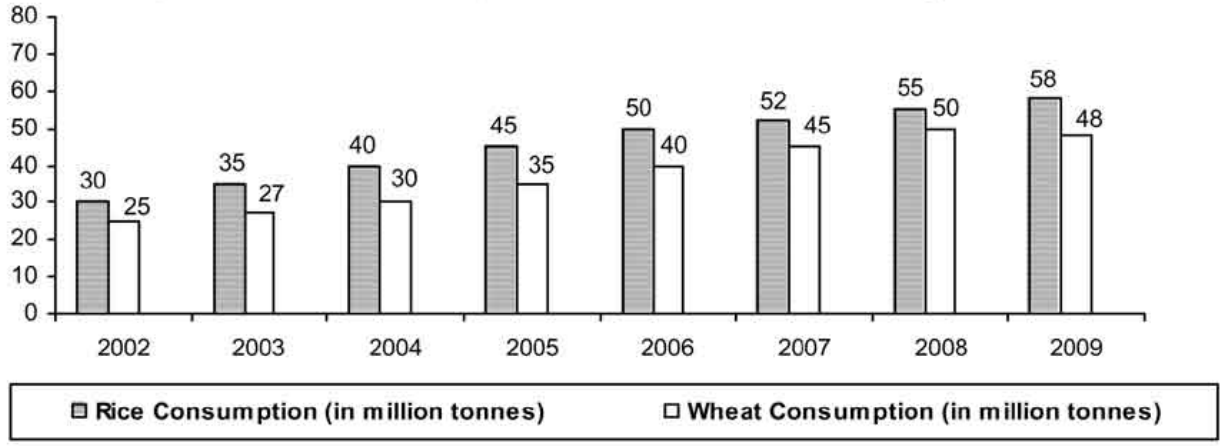
3. Find the sum of all the terms common to the two sequences; 17, 21, 25 ....., 417 and 16, 21, 26, ..., 466.
(1) 4220 (2) 4126
(3) 4080 (4) 4116

4. N is a natural number. How many values of N exist, such that $N^2 + 24N + 21$ has exactly three factors?
(1) 0 (2) 1
(3) 2 (4) More than 2

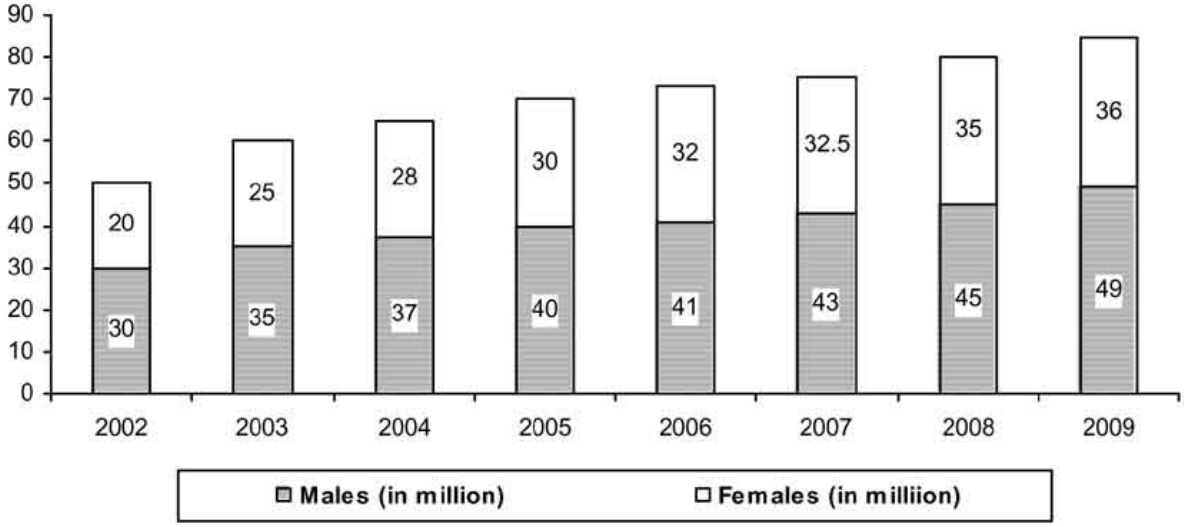
5. Consider a triangle of area 1 unit with sides a, b, c such that $a \geq b \geq c$. then, which of the following is definitely true?
(1) The minimum value that can be attained by a is $\sqrt{2}$.
(2) The triangle is equilateral.
(3) The minimum value that can be attained by b is $\sqrt{2}$.
(4) None of these

6. Mr.Ram sold an article at a certain profit. Had he purchased the article for 12% less than what he actually purchased it for and sold it for 24% more than what he actually sold it for, his profit percentage would have been $2\frac{1}{2}$ times his actual profit percentage. Find his actual profit percentage.
(1) $27\frac{1}{2}\%$ (2) $28\frac{2}{7}\%$
(3) $33\frac{1}{3}\%$ (4) $37\frac{1}{2}\%$

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



© Triumphant Institute of Management Education Pvt. Ltd. (**T.I.M.E.**), 95B, Siddamsetty Complex, Park Lane, Secunderabad –500 003. All rights reserved. No part of this material may be reproduced, in any form or by any means, without permission in writing.
This course material is only for the use of bonafide students of Triumphant Institute of Management Education Pvt. Ltd. and its licensees/franchisees and is not for sale. (10 pages) (ascc/ascd)



$$\text{Per capita consumption of } \mathbf{x} \text{ by males (or females)} = \frac{\text{Total Consumption of x}}{\text{Total Population of males (or females)}}$$

$$\text{Average amount spent on } \mathbf{x} = \frac{\text{Total amount spent on x}}{\text{Population which has consumed x}}$$

Assume that each person consumes only one type of grain, i.e., only rice or only wheat.

7. If the per capita consumption of rice by females in the years 2002 and 2009 are 0.85 tonnes and 0.75 tonnes respectively, then what is the percentage increase/decrease in the per-capita consumption of rice by males in the year 2009 when compared to that in 2002?
(1) 49% (2) 42%
(3) 46% (4) 51%

Additional information for 8 and 9:

Assume that the cost of 1 tonne of rice is 10 units and the cost of 1 tonne of wheat is 20 units.

8. If the ratio of average amount spent by those consuming rice to that by those consuming wheat in the year 2008 is 3 : 4, then what is the difference between the number of males who consumed rice and the number of females who consumed wheat?
(1) 7.8 million
(2) 1.15 million
(3) 3.43 million
(4) Cannot be determined

9. The average value of amount spent on rice and wheat per year is approximately (in million units)
(1) 846.25 (2) 980.75
(3) 1206.25 (4) 1410.5

DIRECTIONS *for questions 10 and 11:* Each question is followed by two statements, I and II. Answer each question using the following instructions:

Mark 1 if the question can be answered by any one of the two statements alone but not by the other statement alone.
Mark 2 if the question can be answered by either of the two statements alone.
Mark 3 if the question can be answered only if both the statements are taken together.
Mark 4 if the question cannot be answered even if both the statements are taken together.

10. A boy was adding consecutive natural numbers from 1 to N. which adding he missed out two numbers and got a sum of 1502. If the product of the two numbers he missed was P then find the values of given that the sum of the two numbers was less then N.
I. P has exactly four distinct factors.
II. The sum of the factors of P other than P was one more than the sum of the two numbers he missed.

11. Among the five contestants A, B, C, D, and E who were participating in Miss Indian context who got the maximum number of votes?
The number of judges who voted is different for each participate and no judge voted for only one participant.
I. All judges voted for either A or E also voted for C.
II. Only the judges who voted for B and C voted for D. Every judge who voted for B voted for A and E.

DIRECTIONS *for questions 12 to 14:* Answer the questions independently of each other.

12. If a, b and c are in arithmetic progression, then the equation ax + by + c = 0
(1) represents a family of straight lines, each of which is at a distance of 5 units from the origin.
(2) represents a family of straight lines, all of which intersect at a point P, which is at a distance of 5 units from the origin.
(3) represents a family of straight lines, each of which is at a distance of $\sqrt{5}$ units from the origin.
(4) represents a family of straight lines, all of which intersect at a point P, which is at a distance of $\sqrt{5}$ units from the origin.

13. Find the number of digits in the number N, if it is given that N < x < (N + 2), where $x = \frac{(24^{24})(27^{27})}{(7776)^{12}}$ and N is an integer.
(1) 24 (2) 25 (3) 26 (4) 27

14. How many natural numbers less than 1000 can be expressed as the difference of two perfect squares in at least one way?
(1) 750 (2) 811 (3) 810 (4) 749

DIRECTIONS *for questions 15 and 16:* Answer the questions on the basis of the information given below.

A certain university conducted an entrance test for its prestigious postgraduate course. When the results of the test were declared, each candidate who had appeared for the test was also given a percentile score, which was calculated as

Percentile score of a candidate

$$= \frac{\text{Number of candidates in the test who scored less than him}}{\text{Total number of candidates who appeared for the test}} \times 100$$

Each candidate got his percentile score in the PQ·RST format, where T was a natural number for at least one candidate. Further, it is known that no approximations were made while determining the percentile score of any candidate.

15. The number of candidates who appeared for the test is at least
(1) 100,000 (2) 10,000
(3) 64 (4) 32

16. If the number of candidates who appeared for the test is not more than 87,654 and no two candidates got the same percentile score, then the number of candidates who appeared for the test is at most
(1) 80,000 (2) 64,000
(3) 50,000 (4) 32,000

DIRECTION *for questions 17 and 18:* Answer the questions independently of each other.

17. If *a*, *b* and *c* are three distinct non-zero real numbers satisfying the equations $a - \frac{bc}{a} = b - \frac{ac}{b} = c - \frac{ab}{c}$, *b* would be equal to

(1) $\frac{a+c}{2ac}$ (2) $-\frac{ac}{a+c}$

(3) $-\frac{a+c}{ac}$ (4) $\frac{ac}{a+c}$

18. If x is a positive integer, which of the following cannot be the value of (x + 3) (x + 5) (x + 7) (x + 9)?
(1) 3465 (2) 5760

DIRECTIONS *for question 19*: The question below is followed by two statements, I and II, giving certain data. You have to decide whether the information provided in the statements is sufficient for answering the question.

Choose 1 if the question can be answered by one of the statements alone but not by the other.
Choose 2 if the question can be answered by using either statement alone.
Choose 3 if the question can be answered by using both the statements together, but cannot be answered by using either statement alone.
Choose 4 if the question cannot be answered even by using both the statements together.

19. How many students from the top 20 rankers in the institute are Commerce graduates if it is known that none of the top five rankers are Commerce graduates?
I. None of the last four out of the top 20 rankers are Commerce graduates.
II. At least 8 of the top 15 rankers and not more than 8 of the last fifteen out of 20 top rankers are Commerce graduates.

DIRECTIONS *for questions 20 and 21:* Answer the questions on the basis of the information given below.

Supandi, an adventurer, travels by a certain road from town A to town B in 15 hours and takes 11 hours to travel from town B to town A, travelling by the same road. Supandi's speed when going uphill is 40 kmph, and when going downhill is 60 kmph and speed on level ground is 48 kmph.

20. Find the distance that Supandi travels from A to B.
(1) 576 km (2) 624 km
(3) 724 km (4) 940 km

21. Which of the following are definitely false?
I. Supandi travelled a total of 364 km uphill when going from A to B.
II. Supandi travelled a total of 242 km downhill when going from B to A.
III. Supandi travelled a total of 196 km on level ground when going from A to B.
(1) Only I (2) Only II and III
(3) Only I and III (4) I, II and III

DIRECTIONS *for questions 22 and 23:* Answer the questions on the basis of the information given below.

A jar of capacity 120 ounces is filled with milk to the brim. On the first day x ounces of milk is replaced with water. Then on the second day (120 – x) ounces of milk is replaced with water. Again on the third day x ounces of milk is replaced with water followed by replacement of (120 – x) ounces on the fourth day and so on, i.e., on the odd days (x) ounces are replaced with water where as on the even days (120 – x) ounces are replaced with water.

22. Find the maximum possible concentration of milk in the jar at the end of day 2

(3) 7560 (4) 13440

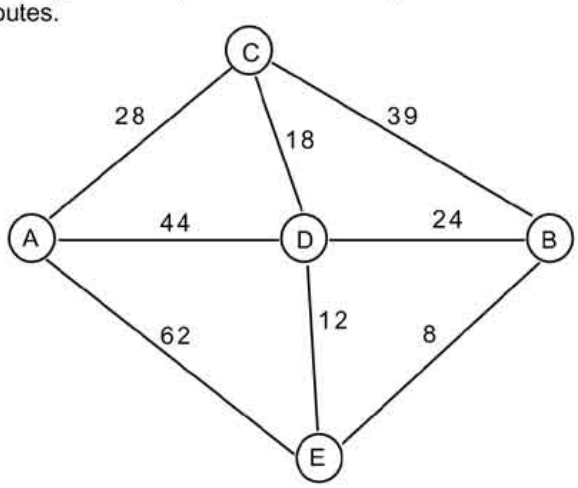
the jar at the end of day 2.
(1) 6.25% (2) 12.5%
(3) 25% (4) 50%

23. If the concentration of milk in the jar at the end of day five is maximum, then find the value of x (in ounces).
(1) 24 (2) 30 (3) 48 (4) 60

DIRECTIONS *for questions 24 to 27:* Answer the questions on the basis of the information given below.

The following diagram shows the different routes for going from town A to town B. The towns are connected by several routes with junctions C, D and E between them. The traffic can move in either direction on each route, except between C and D, which is a one-way route from C to D. The values given beside the routes indicate the cost (in Rupees) for travelling between the connected junctions. Further, the authorities can levy tolls at certain junctions in order to increase or decrease the total cost of travel of any particular route.

Motorists travelling between towns A and B would prefer the route along which the total cost of travel is the least. If two or more routes have the same least cost of travel, then motorists are indifferent between them and the traffic gets evenly distributed among all the least cost routes.



24. If the authorities did not levy any toll at the junctions, what is the minimum total cost (in Rupees) of travel from A to B?
(1) 64 (2) 66
(3) 67 (4) None of these

25. If the authorities want to make the flow of traffic along all the routes connecting the three junctions and town B to be uniform, then which of the following can be the toll (in Rupees) to be levied at junctions C, D and E respectively?
(1) 5, 2, 1 (2) 8, 7, 5
(3) 3, 2, 0 (4) None of these

26. If the authorities did not levy any toll at the junctions and no town or junction, except town A, can be visited more than once, and no route is travelled more than once, the total cost of travel from A to B is at most
(1) Rs.162 (2) Rs.168
(3) Rs.185 (4) Rs.188

27. If a new route connecting junction E and town B is built in addition to that existing presently, what can be the maximum cost of travel along that route, given that all traffic is to flow through that route and the toll (in Rupees) levied at junctions C, D and E is 1, 2 and 3 respectively?
(1) Rs.4 (2) Rs.6
(3) Rs.7 (4) Rs.8

DIRECTION *for questions 28 to 30:* Answer the questions independently of each other.

28. Let x and y be natural numbers such that xy = k, where k is a natural number not more than 1001. If (x_i, y_i) represents a solution to the above equation and z_k is defined as a set containing all distinct values of x_i for xy = k, then which of the following best describes the value of k for which z_k has the highest number of elements?
(1) $829 \le k \le 853$ (2) $921 \le k \le 960$
(3) $980 \le k \le 1001$ (4) $580 \le k \le 620$

29. Nirav plans to prepare a schedule for a seven day period in which he shall play exactly one sport out of cricket, football, hockey and volleyball on each day. The number of schedules that Nirav can prepare in which each of the sports is played on at least one day in the 7 day period is
(1) 1260 (2) 14068
(3) 5880 (4) 8400

30. A trapezium DECB is formed by folding triangle ABC such that vertex A lies on side BC. If BC = $10\sqrt{5}$ and area of the trapezium DEBC is 45 square units, find the area of triangle ABC?
(1) $135\sqrt{5}$ (2) $75\sqrt{5}$
(3) 90 (4) 60

SECTION – II
Number of Questions = 30

DIRECTIONS *for questions 1 to 3:* Answer the questions on the basis of the information given below.

The Production Department of a company requires that on any given day (except Sunday), exactly four workers from among A, B, C, D, E and F have to report for work to meet the scheduled production. The availability of the

provided the production manager makes a special request.

- B can work on Tuesdays, Wednesdays and Fridays. In addition, he can work on Mondays provided D does not work on that day.
- C can work on Mondays, Wednesdays and

to meet the scheduled production. The availability of the workers are subject to the following conditions.

- A can work on Mondays, Wednesdays, Thursdays and Fridays. However, he can work on Saturday Thursdays. In addition, he can work on the first and the third Saturdays of the month.
- D can work on Mondays, Tuesdays, Wednesdays, Thursdays and Saturdays.

- E can work on Mondays, Tuesdays, Thursdays, Fridays and Saturdays. However, on Mondays, if D does not work, then E will also not work.
- F can work on all days except on Thursdays.

None of the workers can work on any day other than those mentioned.

1. If D works on a Monday, then which of the following statements is/are true for that day?
I. A, C, D and F is the only combination of workers possible for that day.
II. A, C, D and E is a possible combination of workers for that day.
III. A, D, E and F is a possible combination of workers for that day.
(1) Only statement I
(2) Only statements II and III
(3) Only statements I and II
(4) Only statement II

2. How many different combinations of workers are possible for Wednesday?
(1) 5 (2) 4 (3) 3 (4) 2

3. Who among the following could have worked on only a single day in a week?
(1) A (2) B (3) C (4) D

DIRECTIONS *for questions 4 and 5:* The sentences given in each of 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.

4. (a) The Electronic Service Delivery Bill 2011 which aims at delivering all public services to citizens in the electronic mode, is a welcome piece of legislation.
(b) Importantly, it sets a five-year deadline for all public services to comply with the provisions.
(c) The draft bill published by the Ministry of information Technology on its website is similar to the Right to Information Act, 2005 in that it incorporates a complaints mechanism and prescribes penalties for failure to comply with the provisions.
(d) What people can expect in the new dispensation is electronic submission of forms and applications for issue or grant of any license, permit, certificate, sanction or approval, and receipt or payment of money.
(e) By alienating paperwork on a massive scale, the new measure can cut the red tape and corruption that notoriously plague governance in the country.
(1) c b a e d (2) c b e a d
(3) a b c e d (4) a e c b d

5. (a) A recent publication by the International Labour
(b) But it is not merely the missed growth in incomes that matters.
(c) Asia may be leading the world in terms of economic recovery from the recent global crisis, but in one critical area it remains a laggard: employment of women.
(d) The finding that the Asia and Pacific region loses up to $ 47 billion annually because of the limited access given to woman-employment and another $ 16-30 billion as a result of gender gaps in education drives home the magnitude of the social opportunities lost.
(e) Deeper still, the stubborn differentials that persist between the genders in various attribution of employment – the type of jobs and regularity of incomes, for instance – reducing women to serve as "buffer workforce".
(1) c a d b e (2) a b d e c
(3) a c d b e (4) c a b e d

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

Four films namely Dhee, Dhoom, Kites and Krish are directed by four directors David, Vinay, Rakesh and Rahul. Each film has a distinct hero among Hritik, Salman, SRK and Amir and each film is made in a distinct language among Telugu, Hindi, Malayalam and Tamil. The budgets of the films are Rs. 2 million, Rs. 1 million, Rs. 3 million and Rs. 4 million. The films are released, one in a week, in the 1st week, 2nd week, 3rd week and 4th week of a month. All the above-mentioned details of the films are not in any particular order.

The following additional information is known.

(1) The film Dhee is directed by Rakesh but it neither stars Amir nor it is made in Malayalam.
(2) The film Dhoom is released in 2nd week of the month with a budget of Rs. 2 million but it is neither directed by Vinay nor it is made in Malayalam.
(3) The film directed by David is made in Telugu but it does not star Amir.
(4) The film Kites is made in Hindi and is neither the highest budget film nor is it released in the 1st week of the month; it is not directed by Vinay but it stars Salman.

6. It it is given that the film directed by Rakesh is released in the 4th week but does not star Hritik, then which of the following is true?
(1) Krish, which is directed by Vinay is made in Malayalam and stars Hritik.
(2) Dhoom, which is directed by David is made in Telugu, has a budget of Rs. 2 million and stars SRK.
(3) Dhee, which is directed by Rakesh stars SRK and is made is Tamil.
(4) None of the above

7. Which movie is made in Malayalam?
(1) Dhee (2) Dhoom

5. (a) A recent publication by the International Labour Organization and the Asian Development Bank, "Women and Labour Markets in Asia; Rebalancing for Gender Equality," makes out a strong case for effective policy interventions in this important segment of the labour market for two main reasons, the untapped economic potential and the effect on meeting the region's development goals.

(3) Kites (4) Krish

8. Which of the following is true if SRK stars in Dhoom?
(1) Kites has a budget of Rs.3 million
(2) Hritik stars in Dhee
(3) Dhee was released in 4th week
(4) None of the above

DIRECTIONS *for question 9:* The question below is followed by two statements, I and II, giving certain data. You have to decide whether the information provided in the statements is sufficient for answering the question.

Mark (1) if the question cannot be answered using both the given statements.
Mark (2) if the question can be answered using both the statements together but not either statement alone.
Mark (3) if the question can be answered using either statement alone.
Mark (4) if the question can be answered using any one of the statements but not the other.

9. Ajith has four cubes and four spheres such that each set of a cube and a sphere is of a distinct colour among red, blue, green and yellow. On each cube and each sphere, he writes numbers 1, 2, 3 and 4 such that each number appears on only one cube and one sphere. Also, the numbers on a cube and a sphere of the same colour are distinct and the sum of the numbers written on a cube and a sphere of the same colour is distinct from that of a cube and a sphere of any other colour.
If Ajith has written the number 2 on a cube, what is the number written by Ajith on a sphere of the same colour as that of the cube?
I. Ajith wrote number 3 on the red cube and number 4 on the red sphere.
II. Ajith wrote number 2 on the yellow cube and number 1 on the yellow sphere.

DIRECTIONS *for questions 10 and 11:* Read the following passage and answer the questions that follow it.

Art suffuses our lives. Whether it's bluegrass, heavy metal, Frank Sinatra of Mozart, music moves us all. On a trip to a foreign city, visiting an art museum is a mandatory exercise. Imaginative writing affects many of us, though – alas – with decreasing frequency.

Why should art be important? Being seen as an "art lover" may increase our status, but otherwise art is not useful. Yet art has been part of the human experience since Paleolithic man painted on the walls of caves in Lascaux, France, and Altamira, Spain, more than 30,000 years ago. Art preceded agriculture, cities and writing.

Denis Dutton, an art professor in New Zealand, has proposed a bold new explanation. He argues that humankind's universal interest in art is the result of human evolutions. We enjoy sex, grasp facial expressions, understand logic and spontaneously acquire language – all of which make it easier for us to survive and produce children. In "The Art Instinct: Beauty, Pleasure, and Human Evolution," Dutton contends that an interest in art belongs on this list of evolutionary adaptations.

Drawing on Charles Darwin's second great book, "The Descent of Man, and Selection in Relation to Sex", Dutton argues that art, like broad shoulders in a man and a narrow waist in a woman, facilitates seduction. We tell stories, sing songs, invent tales, recount jokes and draw pictures in order to find a mate and, having found one, produce children. We value art because, Dutton claims, it may be made of rare and valuable materials and require much skill to produce. People value wealth and skill in choosing a mate.

This is a stimulating but not entirely satisfactory argument. Some forms of art may have evolutionary explanations that do not involve sexual selection, and some forms of beauty may not be linked to art at all. Take music: we can imagine men and women singing to one another for several reasons, but we can also imagine music being used to induce sleep, energize an army, or identify friends and enemies. Or painting: zoologist Desmond Moris and others have encouraged champanzees to paint. Some of their works were hung in museums, without being labeled as the work of chimps, and they received much acclaim. Did these animals paint to lure sexual partners? It seems unlikely. Likewise, the cave paintings done in 30 millennia ago probably had no connection with romance (many were done in remote parts of caves in which no one lived), and may have been produced by shamans for religious purposes.

Dutton recognizes these limitations to his explanation of why art has persisted. His love of music, he notes, cannot be confined to its role in sexual communication; as a child he was entranced with Beethoven's Seventh Symphony, long before he had the faintest interest in girls. Moreover, art, especially music and poetry, helps us to see into the human personality.

Evolution has, without any doubt, left people with an appreciation for both natural and man-made beauty, but sexual selection explains, only a small part of the reason.

10. Which of the following questions is answered by Dutton's research?
(1) Are we genetically predisposed to appreciate art?
(2) Does an interest in art make it easier for humans to survive and reproduce?
(3) Are preferences in music and paintings passed on to children?
(4) Do we value beauty even though we define it differently?

11. Which of the following best describes the way the conclusion functions in the context of the passage?
(1) A last argument supporting the central idea is presented.
(2) Questions arising out of the discussion on the topic are identified for further study.
(3) The conclusion accepts the central claim and closes the case.
(4) Counterarguments and limitations qualify the central argument.

DIRECTIONS *for questions 12 and 13:* In each 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.

12. (a) Journeys are less about the destination than about the enigmatic fusion of person and place,
(b) about the way we discover something about ourselves as we reconnoitter a new city or explore unfamiliar terrain.
(c) The best journeys allow us to immerse in a landscape.
(d) And there is no better way to do that
(e) than by exploring a personal passion.
(1) a and c (2) b, c an d
(3) a, d and e (4) a, b and d

13. (a) A thousand years ago, boatload of Middle Easterners regularly headed to the islands around the South China Sea.
(b) They sought rare spices, established settlements and eventually dominated several of the region's trade routes.
(c) Today, for more 21st-century reasons, Asia-Pacific countries are keen once again to establish themselves as a favourable destination to travellers from the Middle East.
(d) Now in lieu of pepper and cinnamon,
(e) these destination lure visitors with shopping, spas and theme parks.
(1) a and c (2) b and c
(3) b, c and d (4) b, d and e

DIRECTIONS *for questions 14 to 17:* Answer the questions on the basis of the information given below.

Six teams – P, Q, R, S, T and U – participated in a round robin league hockey tournament, in which every team plays one match against every other team. In the tournament, three matches are played every day, such that each of six teams plays exactly one match every day.

The points awarded for matches in the tournament are as follows. If a match ends in a draw, then each team gets two points. If a team wins with a goal difference (i.e., goals scored minus goals conceded) of one, then it gets three points and the losing team gets 1 point. If a team wins with a goal difference of two or more, then it

Team	Goals scored	Goals conceded	Total points
P	3	2	5
Q	3	5	3
R		3	3
S		4	1
T	4	2	6
U	6	3	6

It is also known that
(i) on each day, there was exactly one draw.
(ii) no team scored more than four goals in a match.
(iii) each team scored atleast one goal by the end of second day and no match ended without any goal being scored.
(iv) P played its first match against U.
(v) the number of goals scored in a match played by R is not more than 3.

14. How many goals did team R score by the end of the second day?
(1) 1
(2) 2
(3) 3
(4) Cannot be determined

15. Which team scored the least number of points on the second day?
(1) Q (2) S (3) R (4) P

16. How many goals were scored in the match which Q played on the second day?
(1) 3 (2) 4 (3) 5 (4) 6

17. The team which won its match against S with a goal difference of one is
(1) T (2) R (3) U (4) P

DIRECTIONS *for question 18:* The question below is followed by two statements, I and II, giving certain data. You have to decide whether the information provided in the statements is sufficient for answering the question.

Mark (1) if the question cannot be answered using both the given statements.
Mark (2) if the question can be answered using both the statements together but not either statement alone.
Mark (3) if the question can be answered using either statement alone.
Mark (4) if the question can be answered using any one of the statements but not the other.

gets 4 points and losing team gets none.

The following table gives the partial details of the points obtained, goals scored and goals conceded by different teams at end of first two days of tournament.

18. Is P the father of M?

I. M is sister of Q, who is the daughter of P's wife's mother's son-in-law.

II. P is wife of J.

DIRECTIONS *for questions 19 to 21:* Read the following passage and answer the questions that follow it.

Shelley poetically imagined that in autumm leaves lost their colour as the wild west wind drove them

'... like ghosts from an enchanter fleeing
Yellow, and black, and pale, and hectic red
Pestilence-stricken multitudes.'

Well, that is one hypothesis. But it is unlikely to stand up to scientific scrutiny. And a surprising amount of such scrutiny is being devoted to the question of why trees turn such glorious colours.

In deciduous woodland, the first signs of approaching autumn are written across the forest in shades of yellow and orange. Lower temperatures and shorter days trigger the breakdown of chlorophyll – the green molecule that captures energy from light in the process of photosynthesis. As the chlorophyll is removed, it reveals other pigments that have been swamped by its bold colour. These are called carotenoids. They aid the process of light absorption and, in chlorophyll's absence, give rise to pale and brilliant yellows, ambers, golds and oranges. Different species of tree retain different amounts of carotenoids, which leads to much of the polychromatic beauty of a forest in autumn.

So far so good. But what about those hectic reds? They have been a scientific curiosity for at least a century. The pigments responsible for reds (hectic and otherwise), and also for purple and magenta, are called anthocyanins. These molecules are actively created in autumn, rather than being revealed by chlorophyll's absence. In recent years, researchers have argued that they are produced in response to environmental causes.

The revival of interest in the origin of autumnal reds began with work by William Hoch and his colleagues at the University of Wisconsin-Madison. They reviewed the evidence in an article in 'Tree Physiology'. They found that it supported an idea proposed in the 19th century–that anthocyanins shade the photosynthetic apparatus of the leaf from excess light.

Dr Hoch's team extended this idea, arguing that as a plant starts to disassemble its light-gathering apparatus in preparation for winter, its leaves become particularly sensitive to light damage. The process of disassembly liberates chlorophyll from a molecular production line called the electron-transfer system. That system is designed to corral the energy captured by chlorophyll and use it to build up sugar molecules. Lone chlorophyll, however, dumps its energy resulting in the formation of destructive molecules called free radicals and peroxides. These can kill a leaf.

That might not be thought to matter, since the leaves are about to be discarded anyway. But the reason for the disassembly of the light-gathering apparatus is to recover as many valuable chemicals as possible from each leaf before it drops. Premature leaf fall would thus be a bad thing.

Anthocyanins, Dr Hoch argues, provide a natural sunscreen for a plant's leaves. They absorb light that would otherwise be picked up by lone chlorophyll molecules, thus preventing damage during the period of nutrient recovery. His team found support for this theory in work showing that autumnal anthocyanins were most abundant in leaves exposed to direct sunlight, and least so in those shaded by the canopy.

Other work supports the idea that it is nutrient recovery which is driving the process. In a forthcoming issue of 'Tree Physiology', Paul Schaberg, a researcher working for the United States Department of Agriculture in Vermont, and his colleagues, will report the results of their experiments with sugar maples. Dr Schaberg has found that the timing and extent of red colouration in different trees is consistently related to the concentration of nutritionally valuable nitrogenous compounds and sugars in the leaves. Nutrient deficiencies, especially of nitrogen, triggered more intense colour in maples as the tree attempted to lessen the effects of sunlight.

Not everybody agrees that the main autumnal role of anthocyanins is protection from excess illumination. Their production is triggered by things besides light and nutrient deficiencies: drought, low temperatures, wounding, infection and exposure to ozone are all known to stimulate synthesis of these molecules. Some researchers therefore believe that anthocyanins are doing several jobs at the same time. Besides absorbing light, the pigments can neutralise free radicals directly, help calls to hold on to their water, and even act as an antifreeze.

The precise triggers for anthocyanin production could thus take years to figure out. Until then, a reliable foliage forecast is that researchers will spend their time seeing red, while everybody else simply enjoys the technicolor, sylvan swansong of the autumn.

19. Which of the following best describes the way the passage is structured?
(1) A natural observation is elucidated, a theory is stated, an argument is presented, and alternatives mentioned.
(2) An observation is highlighted, two theories are compared and contrasted, and a conclusion is drawn.
(3) A case is presented, counter-arguments are listed, and the findindg are summarized.
(4) A theory is discussed, its limitations are stated and a conclusion is drawn.

20. Which of the following views, according to the passage, does not disagree with the theory that anthocyanins protect leaves from excess sunlight?
(1) Drought and low temperatures can result in the production of anthocyanins.
(2) Exposure to ozone can result in synthesis of anthocyanins.
(3) Anthocyanins absorb light that would be picked up by lone chlorophyll molecules.
(4) The only role of anthocyanins is to help cells to hold on to their water.

21. Dr Schaberg's experiments with sugar maples prove that
(1) anthocyanins protect leaves from excess light.
(2) autumnal anthocyanins are related to nutrient recovery.
(3) nutrient recovery prevents damages to leaves.
(4) the red colour in different trees are related to the amount of chlorpophyll in the leaves.

DIRECTIONS *for questions 22 to 24:* Read the following passage and answer the questions that follow it.

"Britain's growth will continue into its 59th quarter and then into its 60th and 61st quarter and beyond...Inflation has fallen from 3% to 2.8%, and will fall further this year to 2%...Looking ahead to 2008 and 2009, inflation will also be on target. And we will never return to the old boom and bust." Thus claimed Gordon Brown, as Britain's Chancellor of the Exchequer, in his Budget statement. No Chancellor since the war has quite so disastrously misread the economic situation, or so fundamentally misunderstood the inescapable nature of market economies – namely, that the greater the binge, the greater the hangover. Today, Britain is on the brink of recession, inflation has jumped to 4.7%, the housing bubble has burst, and the mortgage lender Bradford & Bingley has been nationalized.

But Brown was by no means alone in his folly. Banks and financial institutions throughout the western world acted as if the economic cycle was a thing of the past. Instead of understanding that the longer the debt-fuelled boom lasted and the greater the debt burden became, the greater would be the carnage when the inevitable day of reckoning arrived, they acted as if the longer the good times lasted the more they could be regarded as a permanent fixture.

This basic error, born of folly, ignorance and greed, is the biggest cause of the mess we are now in. It was compounded by other factors. A system of remunerating bankers with fat bonuses based on the volume of business done, irrespective of the quality and future profitability of that business, did not help. A variation of Gresham's Law was also at play, with imprudent lending driving out prudent lending.

The current crisis reminds us that, in a free economy, the price of the greatly improved long-term performance that only free economies can provide is an ineradicable economic cycle. As John Maynard Keynes pointed out in the I930s, the cause of the cycle is alternateing moods of optimism and pessimism, and its motor is credit, which enables optimism to determine economic activity. However, when Keynes discussed it, the only significant form of credit was business credit, financing capital investment decisions. There has since been a massive growth of consumer credit, which amplified the business cycle and prolonged the recent upswing. In the U.S., consumer indebtedness is a massive I39% of disposable income while in the U.K. it is even higher at 173%.

The unsurprising consequence of such excess is that individuals and financial institutions must now retrench to rebuild their balance sheets. That is why this is not merely a financial crisis, but an economic crisis. A more prolonged recession than is currently expected is almost inevitable.

What, then, needs to be done? Government and central bank action, around the world, must have two objectives. The first is speedy intervention to prevent a self-perpetuating downward spiral, which means protecting depositors at minimal long-term cost to the taxpayer. The second is to ensure, so far as possible, that future booms are less exaggerated. This has implications for the form of any rescue package, and for the system of financial oversight that is put in place.

And, above all, everyone – banks, borrowers, regulators, central bankers and politicians – must be ever mindful that there is no such thing as an end to boom and bust.

22. The passage supports the point of view that
(1) the current economic crisis is inevitable in the cycle of boom and bust.
(2) a cycle of boom and bust is eradicable in a free economy.
(3) an ineradicable cycle of boom and bust is part of a free economy.

DIRECTIONS *for questions 25 to 27:* Answer the questions on the basis of information given below.

Eight restaurants – P, Q, R, S, T, U, V and W – are located along the periphery of a circular road. Each of these restaurants has its own special cuisine among North-Indian, South-Indian, Continental, Chinese,

(4) free economy encourages spells of boom and bust.

23. It can be inferred from the passage that Keynes theory applied to which of the following?
(1) Rewarding bankers on the volume of transactions.
(2) Lending money without determining the creditworthiness of the individual.
(3) Home loans and car loans.
(4) Loans for buying machines for factories.

24. Which of the following best describes the organization of the passage?
(1) A phenomenon is discussed, causes are analyzed and remedial measures suggested.
(2) A crisis is introduced, factors that aggravated it are delineated, and a warning issued.
(3) A term is defined, its various aspects are highlighted, and alternatives explored.
(4) A statement is highlighted, pros and cons are weighed, and a recommendation issued.

Japanese, Mexican, Spanish and Italian, not necessarily in the same order.

Raghu and Ramu are two gourmets, who are keen to explore cuisines in the restaurants. Raghu started travelling along the road from restaurant T in the clockwise direction while Ramu started in the opposite direction from a restaurant which is neither immediately after nor immediately before the restaurant from where Raghu started.

The following are the observations made by Raghu.
(i) The restaurant whose special cuisine is Japanese is not immediately before the restaurant whose special cuisine is Italian.
(ii) The number of restaurants between the restaurant whose special cuisine is South Indian and restaurant S is same as the number of restaurants between restaurant S and the restaurant whose special cuisine is North Indian.

(iii) Restaurant V, whose special cuisine is not Japanese, is before the restaurant whose special cuisine is Spanish.
(iv) The restaurant whose special cuisine is Chinese is immediately after restaurant T, whose special cuisine is Mexican. The special cuisine of restaurant Q is neither Italian nor South Indian.

The following are the observations made by Ramu.
(i) From the restaurant whose special cuisine is Japanese, he crossed two other restaurants to reach the restaurant whose special cuisine is Chinese.
(ii) U is the third restaurant and the restaurant whose special cuisine is continental is the fourth restaurant he reached.
(iii) The special cuisine of restaurant S is neither Chinese nor Japanese and the restaurant whose special cuisine is North Indian is between the restaurants whose special cuisines are Chinese and Japanese.
(iv) Restaurant P and the restaurant whose special cuisine is continental are adjacent to each other.

25. The restaurant which Raghu comes across immediately after passing the restaurant whose special cuisine is North Indian is
(1) U (2) S (3) V (4) Q

26. Which of the following is the correct combination of the restaurant and its special cuisine?
(1) P – North Indian (2) W – Italian
(3) U – South Indian (4) Q – Japanese

27. What is the special cuisine of the restaurant which, as per the path taken by Ramu, is located three restaurants after the restaurant whose special cuisine is continental?
(1) Spanish
(2) Italian
(3) South Indian
(4) Cannot be determined

DIRECTIONS *for questions 28 to 30:* There are two blanks in each of the following sentences. From the pairs of words given below, choose the pair that fills the blanks most appropriately.

28. _____ thinkers view miracles with _____.
(1) Spiritual . . . veneration
(2) Rational . . . scepticism
(3) Pragmatic . . . trepidation
(4) Skeptical . . . apprehension

29. The problem of chronic diseases has been ____ by the global economic downturn during the past couple of years; higher food gains made over the years in improving health equity have been _____.
(1) aggravated . . . eroded
(2) exacerbated . . . compounded
(3) intensified . . . augmented
(4) mitigated . . . negated

30. The system of _____ upholds the institution of male rule and privilege and mandates female _____.
(1) autarchy . . . remuneration
(2) patriarchy . . . subordination
(3) matriarchy. . . vilification
(4) plutarchy . . . ostracization