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

AIM CAT
(All-India Mock CAT)

(Test Ref.: AIMCAT1212)

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.

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Ref: AIMCAT1212

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 4:* Answer the questions independently of each other.

1. In a school, 20 students play cricket, 30 play basketball and 50 play hockey. If the number of students who play exactly one game is 30 and the number of students who play exactly two games is 20, find the number of students who play all the three games.

(1) 15 (2) 10
(3) 16 (4) Cannot be determined

2. A circle is inscribed in an equilateral triangle ABC of side 6 cm. A tangent is drawn to the circle from a point D on AB such that the tangent from D meets BC perpendicularly at E. Find area (in sq. cm) of the triangle BDE.

(1) $3\sqrt{3}\left(2-\sqrt{3}\right)$ (2) $3\sqrt{3}\left(2+\sqrt{3}\right)$
(3) $2\sqrt{3}\left(2-\sqrt{3}\right)$ (4) $2\sqrt{3}\left(2+\sqrt{3}\right)$

3. In a geometric progression, the sum of the first n terms is 3069 and the first term is 3. If the nth term in the progression is 1536, find the common ratio.

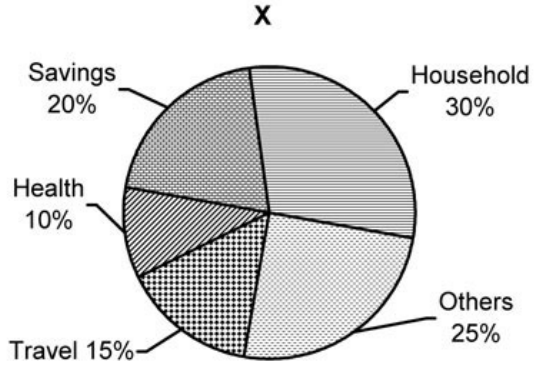
(1) $\frac{1}{2}$ (2) $\frac{3}{2}$ (3) 2 (4) 4

4. There are four green and two red balls in a box. If two balls are randomly drawn from the box, one after the other, without replacement, then what is the probability that the balls drawn will be of different colours?

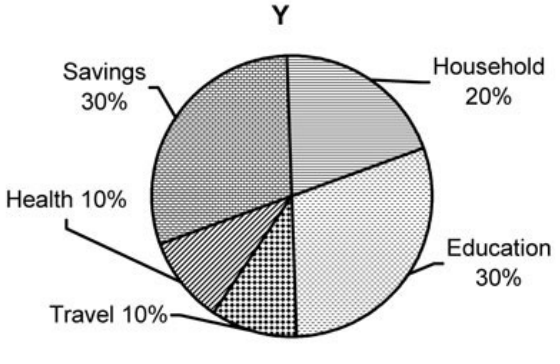
(1) $\frac{7}{30}$ (2) $\frac{7}{15}$ (3) $\frac{8}{15}$ (4) $\frac{23}{30}$

DIRECTIONS *for questions 5 to 7:* Answer the questions on the basis of the information given below.

Pie Charts I and II show the break up under different heads of expenses and the savings of the total income of X and his son Y, respectively, in the year 2007. Pie Chart III shows the allocation of their combined savings, in that year.



Pie Chart I



Pie Chart II

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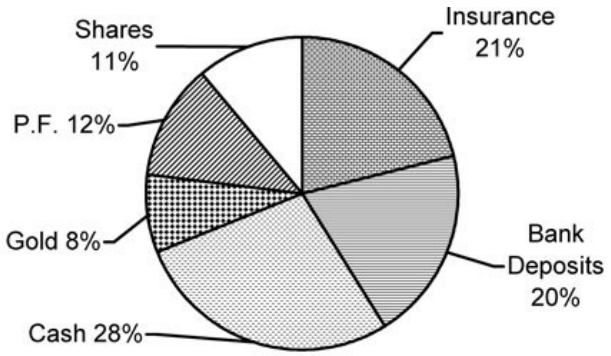


Pie Chart III

5. If the ratio of the incomes of X and Y is 3 : 1, then the number of heads under which X has invested his savings, is at least
(1) 2 (2) 1 (3) 4 (4) 3

6. If the total amount invested in Bank Deposits is the same as Y's expenditure on travel, then what is the ratio of the total expenditures of X and Y?
(1) 4 : 5
(2) 1 : 1
(3) 8 : 7
(4) Cannot be determined

7. If Y invests his savings equally under each of the six heads, while X invests his saving under only five heads, what percentage of his income did X invest in insurance?
(1) 6% (2) 5% (3) 7% (4) 8%

DIRECTIONS *for questions 8 to 14:* Answer the questions independently of each other.

8. Akhil started from Surat at 11:00 a.m. and reached Ahmedabad at 4:00 p.m. Rahim started from Ahmedabad at 1:00 p.m. and reached Surat at 5:00 p.m. One hour after Akhil started, his friend Ritika, whose speed is 25% more than that of Akhil, started from Surat towards Ahmedabad. Assume that each of them maintains a steady speed and uses the same route.

Which of the following statements are true?

I. Ritika meets Rahim 10 minutes after Akhil meets Rahim.
II. Rahim reaches Surat 90 minutes after he meets Ritika.
III. Akhil and Ritika reach Ahmedabad at the same time.

(1) Only I and III (2) Only III
(3) Only II and III (4) Only I and II

9. Find the number of pairs of positive integers which satisfy the equation $x^y = y^{60}$.
(1) 15 (2) 1 (3) 6 (4) 12

10. $\dfrac{4^5+5^5+6^5+7^5+8^5}{15}$ leaves a remainder
(1) 1 (2) 5
(3) 0 (4) None of these

11. Given that $-2 \le p \le 2$, $-4 \le q \le -0{\cdot}25$, $-4 \le r \le -0{\cdot}25$ and $s = pq/r$, then which of the following is necessarily true about the possible values that s can assume?
(1) $0 \le s \le 16$ (2) $-16 \le s \le 16$
(3) $16 \le s \le 36$ (4) $-32 \le s \le 32$

12. Paresh borrowed an amount of Rs.23170 from Munna at an interest rate of 10% p.a., compounded annually, and repayed the entire amount in three equal annual instalments. Find the value of each instalment.
(1) Rs.9317 (2) Rs.9268
(3) Rs.7896 (4) Rs.9648

13. There are two pipes P_1 and P_2, through which water flows into a tank at speeds of 2 m/s and 6 m/s respectively. If the cross-sectional areas of the pipes are 15 cm^2 and 25 cm^2 respectively, and it takes 40 minutes to fill the tank, then find the capacity of the tank (in kilolitres).
(1) 28.8 (2) 32.4 (3) 86.4 (4) 43.2

14. A circular pizza is cut into four identical pieces (or quadrants) with two diametrical cuts made perpendicular to each other. Each piece can be topped with any one of five available toppings but no two adjacent pieces have the same topping. In how many ways can the four pieces be topped?
(1) 260 (2) 160 (3) 70 (4) 240

DIRECTIONS *for questions 15 to 18:* Answer the questions on the basis of the information given below.

A total of 5000 applicants, from three different backgrounds – B.Tech, B.Com and B.Sc – applied for jobs in a certain software company. The table given below lists out, for the applicants from each background, the number of applicants who are experienced and the number of applicants having different types of certifications as a percentage of the total number of applicants from that background. Some of the cells in the table have been left blank intentionally.

Background	Experienced	dot NET Certification Holders	Java Certification Holders	Neither dot NET nor Java Certification Holders.
B.Tech.	40%		60%	40%
B.Com.	30%	60%		20%
B.Sc.		40%		10%
Total	44%	52%		20%

For example, according to the table above, 40% of the applicants from B.Tech background are experienced, while 60% of the applicants from B.Tech background hold a Java certification.

It was observed that some of the applicants with experience did not have any certification, but all those without any experience had either a dot NET or a Java certification or both. Further, 20% of the total applicants are from B.Tech. background. The total number of applicants who have both a dot NET and a Java certification is 1400, of which 200 are from B.Com background.

15. What percentage of the total applicants hold a Java certification?
(1) 28% (2) 42% (3) 56% (4) 14%

16. How many Java certification holders are from B.Com. background?
(1) 600 (2) 800 (3) 400 (4) 1000

17. How many applicants from B.Sc. background are experienced?
(1) 1400 (2) 800 (3) 1000 (4) 1200

18. How many applicants from B.Tech background do not have dot NET certification?
(1) 300 (2) 400 (3) 500 (4) 600

DIRECTIONS *for questions 19 to 23:* Answer the questions independently of each other.

19. The least common multiple of N distinct natural numbers is 2520. Which of the following is the best description of N?
(1) $1 \le N \le 10$ (2) $1 \le N < 50$
(3) $1 < N < 24$ (4) $1 < N \le 40$

20. Consider the expression
$$\left(1-\frac{1}{4}\right)\left(1-\frac{1}{9}\right)\left(1-\frac{1}{16}\right)\ldots\left(1-\frac{1}{n^2}\right)$$
The largest value of *n* for which the value of the expression is not less than 0.51 is
(1) 49 (2) 51 (3) 25 (4) 50

21. Find the area (in square units) of the region in which all the following inequalities are satisfied $|x-y| \le 1, |x| \le 1$ and $|y| \le 1$.
(1) 2.5 (2) 3 (3) 2 (4) 1

22. A change dispensing machine contains 1 rupee, 2 rupee and 5 rupee coins. The total number of coins in the machine is 200. The total amount in the machine adds up to Rs.450. If the number of 1 rupee and 2 rupee coins are interchanged, the total amount comes down to Rs.325. The number of 5

23. Find the value of $0!\,(1^2 + 1 - 1) + 1!\,(2^2 + 2 - 1) + 2!\,(3^2 + 3 - 1) + \text{-----} + 20!\,(21^2 + 21 - 1)$.
(1) 19! + 20! – 2 (2) 21! + 20! – 1
(3) 22! + 20! – 2 (4) 22! + 21! – 2

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

T-mail is an e-mail service provider that provides internet users with two types of e-mail services – Free and Premium. The free users, 20 million in number, can use the basic e-mail services without paying any user fee, while the premium users, 0.4 million in number, pay a monthly fee of \$10 for availing premium services in addition to the basic e-mail services. T-mail conducted a study among its users to ascertain the possible avenues for revenue growth. The study estimated that the monetary equivalent or the *perceived value* of its services was \$120 per annum for each free user and \$480 per annum for each premium user.

T-mail's major source of income is from its advertisements (also known as ads), targeted at its free users, while the services provided to its premium users are free of ads. However, the study noted that the free users experienced a dissatisfaction from being exposed to ads. The study quantified the monetary equivalent of this dissatisfaction and termed it as the '*Tolerance price*'. This *tolerance price* was estimated to be \$40 per annum per free user. Also, the *tolerance price* was estimated to go up linearly with an increase in the quantum of ads displayed to each free user and would reach \$120 per annum per free user when the quantum of ads reaches thrice the present level. The study then defined a parameter called *consumer surplus* for each user which was the difference between the *perceived value* (PV) of its services to the user and the *user cost* (UC). The UC for the free users was the *tolerance price*, while that for the premium users was simply the user fee charged. Hence, the annual *consumer surplus* for each free user, at the existing quantum of ads, was \$120 – \$40 = \$80 and that for each premium user was \$480 – (\$10) 12 = \$360.

rupee coins in the machine is
(1) 25 (2) 20 (3) 30 (4) 15

The following observations were also made while analysing the results of the survey:

(i) The number of free users was estimated to fall linearly with a decline in their *consumer surplus*, and reach 20% of the existing number, i.e., 20 million, at zero *consumer surplus* and then immediately fall to zero with any further decline in the *consumer surplus*.

(ii) Similarly, the number of premium users was estimated to fall linearly with a decline in their *consumer surplus*, and reach zero at zero *consumer surplus*, beyond which there would be no premium users.

(iii) At the existing quantum of ads displayed, T-mail charged its advertisers (i.e, those whose ads were displayed) an average annual *ad fee* of $1 per free user, while the advertisers, on the other hand, perceived an average annual *benefit from ads* of $2 per free user. The *ad fee* charged and the perceived *benefit from ads* are both directly proportional to the quantum of ads displayed. The advertisers would decrease the quantum of ads displayed linearly, if their surplus per free user, i.e., *benefit from ads – ad fee* (both on a per free user basis), decreases, and stop their ads altogether when their surplus per free user reaches zero.

24. What is the maximum percentage by which the quantum of ads displayed to the free users can be increased, beyond which the free user base would be completely eroded?
(1) 100% (2) 200% (3) 300% (4) 150%

25. If Total Annual Advertisers' Surplus, T, = (Number of free users) × (Annual advertisers' surplus per free user), what is the maximum value of T that can be obtained by varying the quantum of ads displayed?
(1) $20.8 million (2) $27.2 million
(3) $24.5 million (4) $12.5 million

26. For what percentage increase in the monthly fee charged for premium users will the number of premium users fall to 0.1million?
(1) 225% (2) 300% (3) 175% (4) 125%

27. The study made a few additional observations. If T-mail were to stop its free services altogether, then the percentage of the existing free users who will migrate to premium services is estimated to be only 0.9%. On the other hand, if T-mail were to downgrade its free services, then the percentage of the existing free users who will stop using T-mail's free services is 90%, of which only 0.8% will choose to migrate to premium services and continue with T-mail.

In the light of the above observations, which of the following is the best course of action to effect a maximum increase in T-mail's revenues?
(1) Stop the free services altogether.
(2) Downgrade the free services.
(3) Increase the ad fee by 60%.
(4) Increase the premium user fee by 60%.

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

28. If $f(x) = \log\left(\frac{x^2+1}{x^2-1}\right)$ and $xy = 2$, then which of the following is equal to $f(x) + f(y)$?

(1) $f(x+y)$
(2) $\log\left(\frac{1+(x+y)^2}{1-(x-y)^2}\right)$
(3) $f(xy)$
(4) $\log\left(\frac{(x+y)^2+2}{(x+y)^2-1}\right)$

29. If $x = -0.2$, which of the following is the largest?
(1) $-\left(x^{-1/x}\right)$ (2) $250x^2$
(3) $\frac{10}{\left(\sqrt{-x}\right)^3}$ (4) $5^{\frac{-1}{2x}}$

30. Rinku goes to a shop with Rs.60 to purchase two types of chocolates – 'Tik-Tak' and 'Rock-n-Roll', each costing Rs.2 and Rs.3 respectively. If Rinku buys at least one chocolate of each type and the number of Rock-n-Roll chocolates purchased are more than those of Tik-Tak, then the number of possible combinations of the two types of chocolates that Rinku could have bought spending the entire amount is
(1) 4 (2) 3 (3) 10 (4) 9

SECTION – II
Number of Questions = 30

DIRECTIONS *for questions 31 to 33:* There are two blanks in each of the following sentences. From the pairs of words given below each sentence, choose the pair that fills the blanks most appropriately.

31. The Eleventh Plan's strategy was to ensure that key sectors of the economy grew at _____ rates and, secondly, to make _____ in the social sector.
(1) remarkable . . . arbitration

_____ protesters observed that they had brought down the dictator, not the dictatorship.
(1) elation . . . passionate
(2) exhilaration . . . naive
(3) euphoria . . . seasoned
(4) excitement . . . young

33. It is now obvious that Nato's _____ mission, under the United Nations Security Council Resolution to

(2) exceptional . . . interference
(3) approachable . . . interposition
(4) acceptable . . . interventions

32. Even when the _____ generated by the exit of the oligarch was in full flow, many among Egypt's more protect civilians in Libya is expanding into a _____ illegal attempt at regime change.
(1) dedicated . . . notoriously
(2) purported . . . flagrantly
(3) sincere . . . strikingly
(4) proxy . . . perceptibly

DIRECTIONS *for questions 34 to 36:* Read the following passage and answer the questions that follow it.

Some people would say it was tantamount to foxes asking to be consulted about the welfare of chickens. But the global tobacco industry, while no longer denying that its products do terrible damage, has long insisted that in any discussion about how to limit the medical effects of the weed, it is a legitimate partner.

That claim was emphatically rejected by health officials from 160 countries after a week's deliberation in South Africa which concluded on November 22nd. In a statement that grew steadily tougher in the course of the meeting–to the dismay of cigarette firms and the delight of their adversaries–it was proclaimed that there is a "fundamental and irreconcilable conflict" between the interests of the tobacco industry and the cause of public health.

Isn't the reference to "irreconcilable conflict" simply a statement of the obvious? Far from it, whichever side of the trenches you occupy. Tantalising but outrageous attempts to glamorise smoking through billboards and films may largely be a thing of the past, but these days the industry uses subtler tactics to burnish its image as a business that, despite everything, cares about its consumers. How much credence governments give these tactics is an important issue.

In countries where governance is weak and people are poor, tobacco companies can make themselves useful by organising "conferences" where, for example, the value of advertising bans is mocked. And ministers can be induced to water down bans on smoking in public places by decreeing more areas where people can still puff away. In what critics call a subtle form of self-promotion, companies can engage in campaigns against "youth smoking" which actually serve to publicise their brands. In Zambia, for example, British American Tobacco (BAT), the second-largest player in the global business, has been involved in a campaign to stop the sale of cigarettes to people under 18.

And BAT, as it happens, was quick off the mark in denouncing the outcome of the South African meeting. It emphasised what may be one of the industry's more plausible arguments in favour of being treated as a legitimate partner: the need to crack down on cigarette smuggling (as urged by the global treaty) which tends to rise as high taxes are slapped on tobacco (also recommended by the treaty).

The guidelines adopted in South Africa, so BAT complained, could ban most public communication by tobacco companies, minimise contact between them and governments and ban the display of tobacco products in shops. Such "extremism" would obstruct the efforts of the "legitimate tobacco industry" to block illegal sales to children, fight illicit commerce and invest in "safer" products. (For health advocates, the very idea of "safe" forms of tobacco is misleading.) Another proposal that won an approving mention at the South African meeting–plain packaging for all cigarettes–would help counterfeiters and smugglers, BAT says.

Some critics would say Big Tobacco has been a latecomer to the war against smuggling. In years past, the European Commission used to accuse well-known firms of colluding with smugglers by slipping them merchandise that was destined to enter the European Union illegally. European officials at the South African meeting said they couldn't fight contraband without at least talking to legal producers. (Other foot-draggers at the gathering were the governments of Japan and China, both of which have big stakes in the tobacco business.)

The United States is a conspicuous absentee from the WHO's war against smoking. The tobacco treaty is one of many instruments of international law that America helped to design, only to hold off from ratifying it because of stiff opposition on Capitol Hill. For example, Richard Burr, a senator from North Carolina, calls the treaty a surrender of sovereignty which would punish the United States by forcing it to fund the lion's share of a global anti-tobacco drive with no corresponding rise in influence. Moreover, he says, the drafters of the treaty refused to listen to the "producers of tobacco"–a sure sign that their purpose was not "to bring a safer product to market" but to eliminate the production of tobacco altogether. On the last point, at least, tobacco's sternest foes might concur with the senator.

34. We can understand from the passage that:
(a) Some critics of tobacco would like the abominable product to be eliminated from the market altogether.
(b) China and Japan are reluctant to endorse the more stringent measures related to tobacco.
(c) Tobacco firms may have aided the smuggling of related merchandise into Europe.
(d) Keeping tobacco producers out of the loop in the fight against contraband may have detrimental effects.

(2) Such politicians shedding crocodile tears over the poor man's plight.
(3) Such politicians contesting elections.
(4) Such politicians continuing in positions of authority.

36. One of the following supports the tobacco industry's argument that they be treated as legitimate partners to combat cigarette smuggling. Identify the statement.
(1) High taxes are imposed on tobacco.

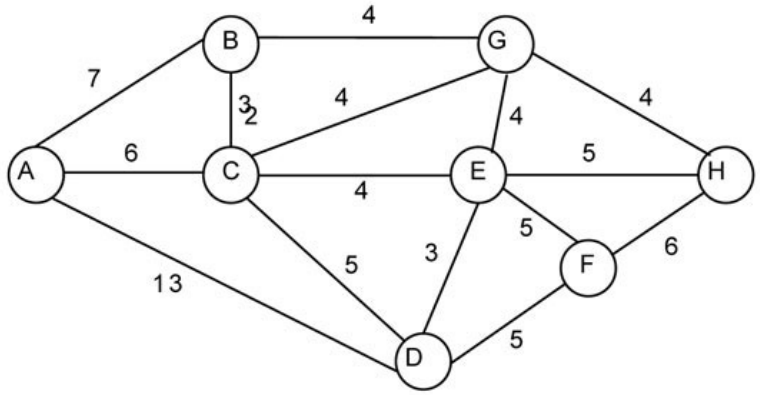
detrimental effects.

(1) Only (a) (2) (a) and (b)
(3) (a), (b) and (c) (4) (a), (b), (c) and (d)

35. Which of the following statements about politicians, known to be corrupt, is in line with the author's perception of the fox and chicken allegory?
(1) Such politicians, in power, distributing largesse to their kith and kin.
(1) High taxes are imposed on tobacco.
(2) Legal producers can cooperate with governments to block illegal sales to children.
(3) Most of the cigarettes smoked in Canada are illegal.
(4) Cigarettes are smuggled into the rich parts of Europe where the retail price of cigarettes are very high.

DIRECTIONS *for questions 37 to 39:* Answer the questions on the basis of the information given below.

A, B, C, D, E, F, G and H are eight places which are interconnected by roads as given in the figure below.



The value given alongside each road represents the distance (in km) between the two places connected by that road. The exact distance between C and E is not known, but it is known that it is at least d_1 km and at most d_2 km. No roads other than those given above exist between any two of these eight places.

37. If d_1 = 7 km and d_2 = 10 km and no place can be visited more than once, then what is the longest distance (in km) one has to travel for going from A to H?
(1) 36
(2) 40
(3) 39
(4) Cannot be determined

38. If due to road repairs, no journey can be undertaken on the direct road from A to C, and no journey is possible through E as there is a procession going on, then in how many ways can one travel from A to C without visiting any place more than once?
(1) 8 (2) 5 (3) 6 (4) 7

39. If d_1 = 4 km and d_2 = 7 km and all roads to G are blocked, then what is the shortest distance (in km) one has to travel for going from H to B by visiting each city (other than G) exactly once?
(1) 31
(2) 32
(3) 33
(4) Cannot be determined

DIRECTIONS *for questions 40 to 42:* In each question, there are five sentences. Each sentence has pairs of words / phrases that are italicized and highlighted. From the italicized and highlighted words / phrases select the most appropriate words /phrases to form correct sentences. Then from the options given choose the best one.

40. The soldiers were losing the battle when they heard the sound of hooves; the **cavalry** [a] **/ calvary** [b]
The watchman became **weary** [a] **/wary** [b] when he heard of robbery in the neighbourhood.
(1) a b a a b (2) b a a b b
(3) a a a b b (4) b a b b a

41. Matteo lifted his eyes to the matrix of seeming disorder, and wondered at the venerable sow, ill-nurtured and slack with **inanity** [a]**/ inanition** [b], who yet could produce robust litters on demand.
Alliterative [a] **/ Tautological** [b] implicatures which actually arise in a language are not ones that audiences can work out.
What emerges is a tale of misspent fortunes and murderous **revenge** [a] **/ avenge** [b] among the crumbling ruins of an old film set.
Making it much more difficult to retire on grounds of ill-health was a rather **callous** [a] **/callus** [b] way of dealing with part of the problem.
As the two planes entered the mission area, they were briefed by departing aircraft who had been receiving anti-aircraft **flak** [a] **/ flack** [b] from the northern edge of the mission area.
(1) b b a a a (2) b a b b b
(3) a b b a a (4) a b a b a

42. The curtain of magic at the entrance rippled, letting in crowd-howls, a heavy bass beat and a **minion** [a] **/ minyan** [b] -vampire.
It is suggested that the introduction of a work place parking **levee** [a] **/ levy** [b] may lead to the introduction of car clubs at work.
I am a **poseur** [a] **/ poser** [b], I'm really not sincere

had arrived.

Her vivid pictures come easily to life; we taste the soggy tomato sandwiches she takes to school and **exult** [a] **/exalt** [b] in her first glimpse of the ocean.

Let the other party leaders get paranoid about internal **dissent** [a] **/ descent** [b].

Luckily a routine test allowed my doctor to catch it at a very early stage, and the **diagnosis** [a] **/ prognosis** [b] is excellent — we expect a full and speedy recovery.

or authentic, so I just act like one who is, and hope I am accepted by others.

The worst thing we can do for peace is to **abstain** [a] **/ refrain** [b] from a resolution condemning the settlements.

My **ideal** [a] **/ idyll** [b] is to provide services to those who need them and those who choose to participate in them.

(1) a b a a a (2) a a b b a
(3) a a b a a (4) b a b a a

DIRECTIONS *for questions 43 to 45:* Read the following passage and answer the questions that follow it.

Over the next 30 years cities in the developing world are set to grow by an extra 2 billion. But many governments have become doubtful of their ability to cope with urbanisation on such an enormous scale; some have concluded that they ought to slow the process down in order to minimise social upheaval. This view owes as much to anti-urban bias as it does to sober analysis.

New research published by the World Bank in its annual flagship World Development Report suggests that pessimism over the future of huge cities is wildly overdone. The bank argues that third-world cities grow so big and so fast precisely because they generate vast economic advantages, and that these gains may be increasing. Slowing urbanisation down, or pushing it towards places not linked with world markets, is costly and futile, the bank says. At a time of contagion and bail-outs, the research also reaffirms the unfashionable view that the basic facts of geography – where people live and work, how they get around – matter as much as financial and fiscal policies.

The bank's research yields lots of new insights. It argues, for example, that the share of humanity that lives in cities is slightly lower than what most people think. The report's main point is that, whatever their exact dimensions, the huge cities of the poor world should not be written off as a disaster simply on grounds that they are too big, too chaotic, too polluted and too unequal.

It is true that they are unprecedented in size. Mexico City, Mumbai, Sao Paulo and Shanghai each have over 15m people, whereas Paris and London, after their surge in the 19th century, had less than half that. The average population of the world's 100 largest cities now exceeds 6m. In 1900, it was only 700,000.

But relative to the size of countries' populations, the current growth is far from unusual. Between 1985 and 2005 the urban share of the population of developing countries rose by eight percentage points. Between 1880 and 1900, the bank says, the urban share in then-industrialising Europe and America went up by about the same amount. Over time, cities as disparate as Santiago (in Chile), Seoul, Lisbon and São Paulo have all followed strikingly similar paths, rising fast until they made up about a quarter of their countries' populations, then stabilising when the country's income hit about $5,000 per person. This path roughly tracks the transition of a country from an agricultural to an industrial base. Many countries are undergoing that sort of transition now, and therefore urbanisation is accelerating. But history suggests it will not go on rising at this rate for ever.

History also suggests that the income gaps that worry governments will narrow. As people move to the city, urban wages are typically 40-50% higher than unskilled farm earnings (that was the premium in Europe in the 19th century; it is about the same in developing countries today). But the income gaps of rich countries have narrowed, so living standards in the West today are roughly the same between town and country.

That convergence is starting in poor countries, too: in poorer Malawi and Sri Lanka, city dwellers account for a much bigger share of consumption than of population (20% compared with 10%). But in richer Chile and Brazil, urbanites account for only slightly more consumption than population.

So one answer to the question – why are third-world cities so big – is that they are not, in relative terms, all that large. But another answer, suggests the World Bank, is that they are big because they do an economic job that is becoming more, not less, important.

If it is so important where economic activity takes place, what should countries do if they lack big cities – perhaps because they are landlocked, or cut off from world markets or have many poor people living in rural areas? These, the bank thinks, are the real problems of urbanisation, not the multiplication of slums or congestion. The answer, in the bank's view, depends on why people are cut off. If they are trapped in underemployment in remote rural areas, the main task is to establish land markets and basic services (schools, streets, sanitation) to help cities grow. This is the situation in much of Africa and remote parts of China.

Where urbanisation has started but pockets of the population are trapped far away, governments have to focus more on transport and other sorts of infrastructure to connect lagging regions with fast-growing ones. It is not until a more

advanced stage of urbanisation is reached – with 75% of the population in cities (like, say, northern Egypt or Rio de Janeiro) – that it makes any sense to spend a lot on such policies as slum clearances, lest the now-teeming city is split apart by crime and grime.

43. The passage suggests that the 'real problems of urbanization' can be tackled by
(1) establishing special economic zones to decluster production in cities.
(2) arresting the flow of credit to business services in cities.
(3) clearing the slums in the city and rehabilitating the displaced in cheap housing sectors in less congested areas.
(4) establishing land markets as well as infrastructure that connects places.

44. It can be understood from the passage that the World Bank report indicates concern about large cities more in the aspect of
(1) consumption rather than population.
(2) size rather than economic activity.
(3) access rather than prevalence of slums.
(4) crime rather than congestion.

45. The World Bank allays third world fears that the huge cities would spiral out of control by giving all the following reasons EXCEPT:
(1) The rates of urbanization would stabilize after a certain level of urbanization is reached.
(2) The share of consumption of urbanites would remain higher than that of country dwellers.
(3) Income gaps between urban and rural wages would reduce over time.
(4) The rates of urbanization are quite normal in developing countries.

DIRECTIONS *for questions 46 to 49:* Answer the questions on the basis of the information given below.

Five friends – Navandar, Chandekar, Waradkar, Bholanekar and Edwankar – purchased five books – *The Kite Runner*, *Simoqin Prophecies*, *The God of Small Things*, *Paddy Clarke Ha Ha Ha* and *The Finkler Question.* As none of the friends had read any of the five books, they decided to finish reading the books in exactly five days, with each of them reading exactly one book per day. At the end of each day, all the friends met together and exchanged the books among themselves so that each of them got a new book to read. The following information is also known about the order in which the books were read:

(i) All the friends, except Chandekar, read *Simoqin Prophecies* before they read *The Finkler Question*.

(ii) *The Kite Runner* was the third book read by Bholanekar and he read it after he read *Paddy Clarke Ha Ha Ha*.

(iii) Waradkar was the third person to read *Paddy Clarke Ha Ha Ha* and after reading it, he gave the book to Navandar.

46. What was the first book read by Chandekar?
(1) *The God of Small Things*
(2) *The Finkler Question*
(3) *Paddy Clarke Ha Ha Ha*
(4) Cannot be determined

47. Who read *Simoqin Prophecies* on the fourth day?
(1) Bholanekar
(2) Navandar
(3) Chandekar
(4) Cannot be determined

48. Which of the following is the order of the persons

DIRECTIONS *for questions 50 and 51:* The following question has a paragraph from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

50. Those who are able to be proactive can often overcome stressors and are more likely to be able to cope well with unexpected situations. On the other hand, those who are more reactive will often experience more noticeable effects from an unexpected stressor. In the case of those who are passive, victims of a stressful event are more likely to suffer from long term traumatic effects and often enact no intentional coping actions. _____
(1) Trauma can be caused by man-made and natural disasters, including war, abuse, violence or earthquakes.
(2) These observations may suggest that the level of trauma associated with a victim is related to such independent coping abilities.
(3) A number of psychotherapy approaches have been designed with the treatment of trauma in mind.
(4) People who go through these types of extremely traumatic experiences often have certain symptoms and problems afterward.

51. The main arguments against sanctions is illustrated by their role in propping up Mr. Castro. They have provided the dictator with a convenient excuse for all that is wrong with his country. They are also woefully indiscriminate weapons: plenty of poor Cubans, not to mention perfectly respectable foreign business people, have suffered needlessly. And sanctions are as difficult to get rid of as they are easy to invent, since giving up sanctions nearly always involves a climb-down by the sanctioner. _____
(1) The President came to office pledging to simplify and reduce America's use of sanctions.
(2) Besides, with America's sanctions there is an added injustice: their extra-territoriality.
(3) Were an embargo to be withdrawn, Mr.Castro would claim victory.
(4) None of this suggests that sanctions should be altogether banned.

DIRECTIONS *for questions 52 and 53*: Each question consists of five statements followed by options consisting

who read *The God of Small Things* (from the first day to the fifth day)?
(1) Bholanekar, Navandar, Chandekar, Waradkar, Edwankar.
(2) Waradkar, Edwankar, Navandar, Chandekar, Bholanekar
(3) Edwankar, Bholanekar, Chandekar, Waradkar, Navandar.
(4) Cannot be determined

49. After reading *The Finkler Question*, Navandar gave the book to
(1) Bholanekar.
(2) Edwankar.
(3) Chandekar.
(4) Cannot be determined

of three statements put together in a specific order. Choose the option, which indicates a valid argument, that is, where the third statement is a conclusion drawn from the preceding two statements.

52. A. All men are Martians.
B. All women are from Venus.
C. Some from Venus are non-vegetarians.
D. All Martians are vegetarians.
E. All men are vegetarians.
(1) ABE (2) BCD (3) AEC (4) ADE

53. A. No Rose is a Bud.
B. Thorns are Flowers.
C. Some Flowers are not Buds.
D. No Thorn is a Bud.
E. Roses don't have Thorns.
(1) BDC (2) ABE (3) ADE (4) DEC

DIRECTIONS *for question 54:* Each question consists of a statement followed by four choices. Identify and mark as your answer, the choice which NEGATES the statement given in the question.

54. Unless Ajay or Sujay do not go to school, Vijay will not go to school.
(1) Vijay, Sujay and Ajay went to school.
(2) Ajay went to school but Sujay and Vijay did not.
(3) Sujay went to school though both Ajay and Vijay did not go to school.
(4) Vijay went to school though both Ajay and Sujay did not go to school.

DIRECTIONS *for questions 55 to 57:* Each question consists of five sentences on a topic. Some of the sentences are grammatically incorrect or inappropriate. Select as your answer the option that indicates the grammatically correct and appropriate sentence(s).

55. A. Indians naturally make excellent sports presenters primarily because of two basic traits.
B. First is their knowledge of the game, which one might guess comes naturally to them and secondly and more important, a deep and abiding passion.
C. Alan Wilkins, a cricket analyst and commentator, was in Mumbai as the judge of Mumbai auditions for Cricket commentators and was taken aback by both the quality as well as the depth that some of the participants had.
D. Youngsters, software and corporate professionals, and others were there to prove that they have it in them to be the next face of cricket presentation in India.
E. It was fascinating though some of them actually brought out a uniquely fresh perspective to the art of cricket presentation.
(1) A, B and D (2) B, D and E
(3) Only A (4) A and D

56. A. Many people believe that high BP can be cured; they stop drugs when the BP levels fall.
B. What they need to understand is that hypertension is incurable, but can be kept within limits with the right lifestyle changes and drug therapy.
C. The goal for most patients should be to lower the systolic BP below 130 mm Hg and the diastolic BP below 90 mm Hg.
D. And it is wise not to forget that high BP is the first – and easily measurable – irreversible sign that many organs in the body are on attack.
E. BP levels can be kept lower by adopting a healthy lifestyle, positive outlook with low stress levels and making the right changes in diet.
(1) Only B (2) B, C and E
(3) A and D (4) A, D and E

57. A. Customers are a critically important part of 'Demand Strategy'.
B. But demand goes far deep and involves a greater array of forces and factors than customers alone can supply.
C. It was seen that companies that relied only on their customers wouldn't have got themselves into trouble if they set a context within which they heard, understood and evaluated what customers told them.
D. Thus, though listening to customers provides enormous value, there must have been a system of checks and balances through which you can validate all that you are being told by customers.
E. Before the companies even talk to a customer, in 'Demand Strategy', they gather a fact-base on past, current and emergent demand, a process they call a demand forces and industry factors analysis.
(1) A and D (2) A, C and E
(3) A, C and D (4) A and E

DIRECTIONS *for questions 58 to 60:* Read the following passage and answer the questions that follow it.

Two of the oddest things about people are morality and culture. Neither is unique to humans, but Homo sapiens has both in an abundance missing from other species. Indeed, that abundance – of concern for the well-being of others, (even unrelated others), and of finely crafted material objects both useful and ornamental – is seen by many as the mark of man, as what distinguishes humanity from mere beasts.

How these human traits evolved is controversial. But two papers in 'Science' may throw light on the process. In one, Samuel Bowles of the Santa Fe Institute in New Mexico fleshes out his paradoxical theory that much of human virtue was forged in the crucible of war. Comrades in arms, he believes, become comrades in other things, too.

In the other paper, Mark Thomas and his colleagues at University College, London, suggest that cultural sophistication depends on more than just the evolution of intelligence. It also requires a dense population. If correct, this would explain some puzzling features of the archaeological record that have hitherto been put down to the arbitrary nature of what has survived to the present and what has not.

Dr Bowles has focused the argument on war, since it is both highly collaborative and often genetically terminal for the losers. To gather his data, Dr Bowles trawled through ethnographic and archaeological evidence about warfare between groups of hunter-gatherers. This is rarely war in the modern sense of planned campaigns. It is more a matter of raids, ambushes and fights between groups who have met accidentally. It is, nevertheless, quite lethal. Dr Bowles identified eight ethnographic and 15 archaeological studies that met his criteria of reliability and abundance of data. They suggest that 12-16% of mortality is the result of such low-level warfare. This is a figure much higher than, for example, the mortality caused in Europe by two world wars, and is certainly enough to drive evolution.

Dr Thomas and his colleagues rely on a mathematical model. They are trying to explain the pattern of apparent false-starts to modern human culture. The species is now believed to have emerged 150,000-200,000 years ago in Africa and

to have begun spreading to the rest of the world about 60,000 years ago. But signs of modern culture, such as shell beads for necklaces, the use of pigments and delicate, sophisticated tools like bone harpoons, do not appear until 90,000 years ago. They then disappear, before popping up again (and also sometimes disappearing), until they really get going around 35,000 years ago in Europe.

The team drew on an earlier insight that it requires a certain number of people to maintain skills and knowledge in a population. Below this level, random effects can be important. The probability of useful inventions being made is low and if only a few have the skills to fabricate the new inventions, they may die without having passed on their knowledge.

Their model suggested that once more than about 50 groups were in contact with one another, the complexity of skills that could be maintained did not increase as the number of groups increased. Rather, it was population density that turned out to be the key to cultural sophistication. The more people there were, the more exchange there was between groups and the richer the culture of each group became.

Dr Thomas therefore suggests that the reason there is so little sign of culture until 90,000 years ago is that there were not enough people to support it. It is at this point that a couple of places in Africa—one in the southernmost tip of the continent and one in eastern Congo—yield signs of jewellery, art and modern weapons. But then they go away again. That, Dr Thomas suggests, corresponds with a period when human numbers shrank. Climate data provides evidence this shrinkage did happen.

58. The two central arguments in the passage are:
(1) People are militaristic because they are altruistic, and societies are populous because they are cultured.
(2) People are militaristic because they are selfish, and innovative because they are survivors.
(3) People are altruistic because they are militaristic, and societies are cultured because they are populous.
(4) People are selfish because they are altruistic, and societies are populous because they are innovative.

59. The passage presents a seeming contradiction. Which of the following statements presents it?
(1) Altruism and craftsmanship are the hallmark of man.
(2) Intelligence is not sufficient to create culture.
(3) Individuals are genetically predisposed to act in self-sacrificial ways.
(4) Aggression gave rise to altruism.

60. The pattern of apparent false-starts can be attributed to
(1) the random nature of archaeological excavations.
(2) the hitherto lack of mathematical models.
(3) the deficit in numbers to sustain cultural development.
(4) the precedence of useful artefacts to ornamental ones.