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

Ref: AIMCAT1317

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 12: Answer the questions independently of each other

1. The selling price of an article when increased by 25% equals the marked price of the article. If the cost price of the article is half its marked price, then the percentage of profit on selling the article is
(A) 37.5% (B) 40%
(C) 60% (D) 50%

2. A glass jar contains 25 tokens printed with the integers from 1 to 25, one on each token. Ramu and Shyamu randomly pick one token each simultaneously. What is the probability that they pick two consecutive integers?
(A) $\frac{2}{25}$ (B) $\frac{4}{25}$ (C) $\frac{23}{25}$ (D) $\frac{21}{25}$

3. For what values of C does the following system of equations have no solution?
(i) $2x + y + 3z = 4$
(ii) $3x + y - z = 5$
(iii) $x + y + 7z = C$

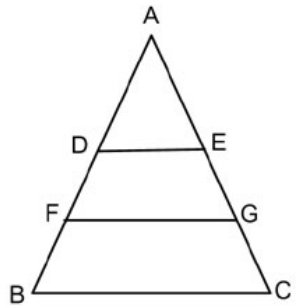
(A) 3
(B) 9
(C) 3 or 4
(D) Any value other than 3.

4. A certain number of bacterial cells are placed in a petri dish and every hour exactly k% of the bacteria that are present at the beginning of the hour perish. If it was noted that the number of bacteria that perished in the first two hours is the same as the number of all the bacteria that perished after the first two hours, then what percentage of the initial bacteria were alive after the third hour?
(A) 26.24% (B) 29.37%
(C) 42.10% (D) 35.36%

5. What is the remainder when 90^{91} is divided by 13?
(A) 0 (B) 7 (C) 12 (D) 1

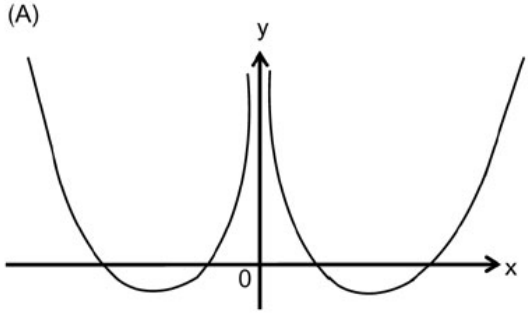
6. In the triangle ABC given, DE and FG are drawn parallel to BC, such that the areas of triangle ADE, quadrilateral EGFD and quadrilateral GCBF are all equal. What is the ratio of the lengths of DE and FG?

(A) $1 : \sqrt{2}$
(B) $\sqrt{2} : 3$
(C) $1 : 2$
(D) $\sqrt{3} : 2$

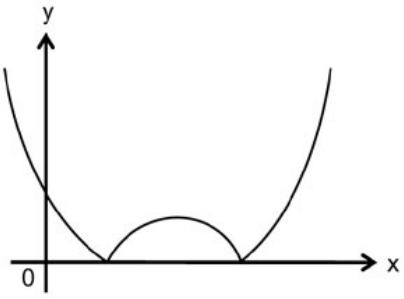


7. Which of the following graphs most accurately represents the function $f(x) = a|x| - \frac{b}{|x|} + c$, where $a = 1$, $b = -2$ and $c = -3$?

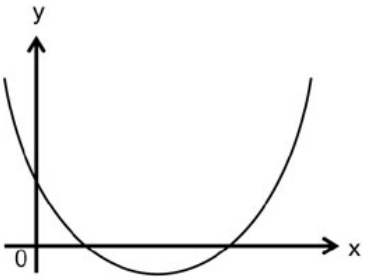
(A)



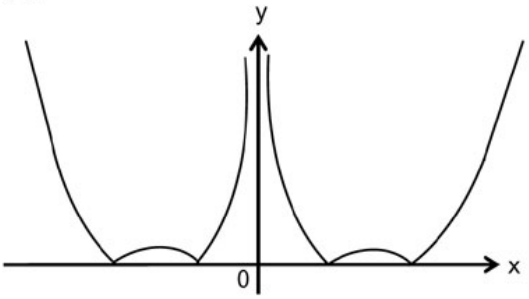
(B)



(C)



(D)



8. A certain number of cats eat a certain number of mice over a period of several days. Each cat eats the same number of mice, which is greater than the number of cats. If there are at least three cats and the total number of mice eaten is 999919, how many cats were there?
(A) 667 (B) 899
(C) 1147 (D) None of these

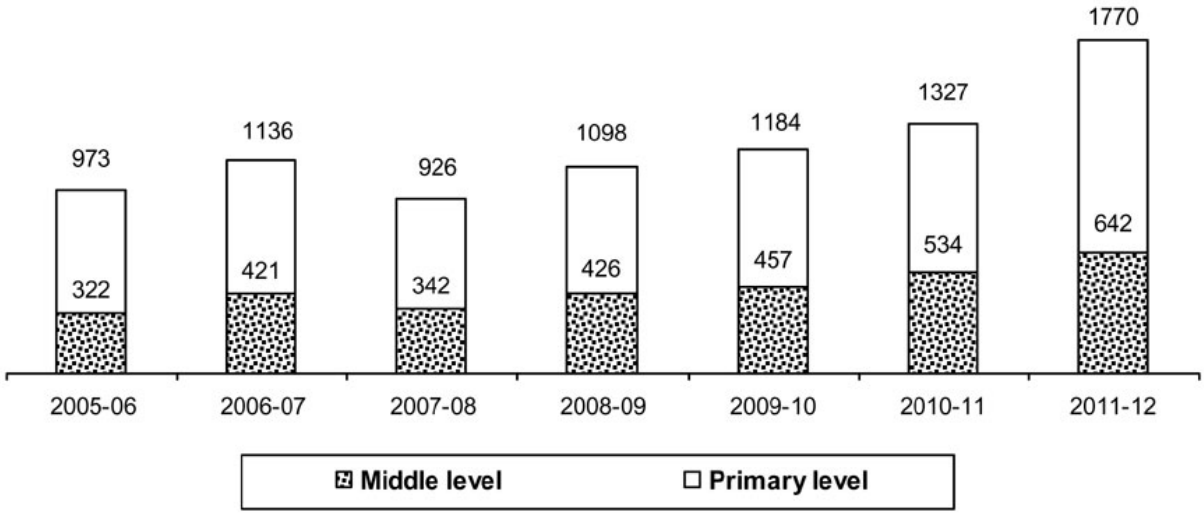
9. If the sum of three integers is 10, then the sum of the fourth powers of the three integers cannot be less than
(A) 10000 (B) 370
(C) 418 (D) 600

10. Find the number of three-digit numbers which when divided by 11 leave a remainder of 9 and when divided by 7 leave a remainder of 2.
(A) 11 (B) 12 (C) 14 (D) 10

11. There are 2272 students in a school. All the students stand in a row, from left to right, holding a number such that the number with any student (except those at the ends) equals the sum of the numbers with the student on his immediate left and the student on his immediate right. If the numbers with the 1136^{th} and 1137^{th} students from the left end are – 57 and 16 respectively, then find the sum of the numbers with all the students.
(A) 46, 576 (B) –89
(C) 130 (D) –41

12. Which of the following points (x, y) in the co-ordinate plane does not lie on the line $31x + 13y - 75 = 0$?
(A) (2, 1) (B) (–11, 32)
(C) (–24, 63) (D) (–37, 95)

Directions for question 13: Answer the question on the basis of the information given below.



The graph above gives the number (in lakhs) of children who have enrolled for the primary and middle levels of education in India for the period 2005-06 to 2011-12. In each year, the smaller number represents the number of students at the middle level while the larger number represents the total number of students at both the primary and middle levels together.

13. The highest percentage change in the ratio of primary level enrolments to middle level enrolments between any two consecutive years in the given period is
(A) 18.32% (B) 7.62%
(C) 6.65% (D) 16.01%

Directions for questions 14 to 16: Answer the questions on the basis of the information given below.

The table below gives the expected times of arrival and departure of ten flights at an airport on a certain day. The airport has five runways – R_1, R_2, R_3, R_4, R_5 – and

four terminals – T_1, T_2, T_3 and T_4. A runway is used by a flight for take-off and landing purposes. A terminal is used to park a flight after navigating through a runway. Each terminal can accomodate only one flight and any flight landing at the airport occupies the 1st available terminal in the order T_1, T_2, T_3, T_4. The times below are mentioned in the 24-hour format.

Flight No.	ETA	ETD
6E-372	06:20	08:15
SG-916	06:44	09:08
IT-162	07:06	09:10
IT-3184	07:20	08:59
SG-423	08:28	11:23
KF-4197	09:06	10:49
6E-168	09:22	10:58
IT-345	09:36	11:07
IC-816	11:13	13:10
IC-724	11:27	13:16

ETA - Expected Time of Arrival at terminal.

ETD - Expected Time of Departure from terminal.

Note: **1.** Assume that for any flight, the 'ETA at' and 'ETD from' any terminal are independent of the terminal at which the flight is parked.
2. Assume that the actual times of arrival and departure were the same as the ETAs and ETDs for all the flights.

14. The flight IC-724 would have been parked at terminal
(A) T_1 (B) T_2 (C) T_3 (D) T_4

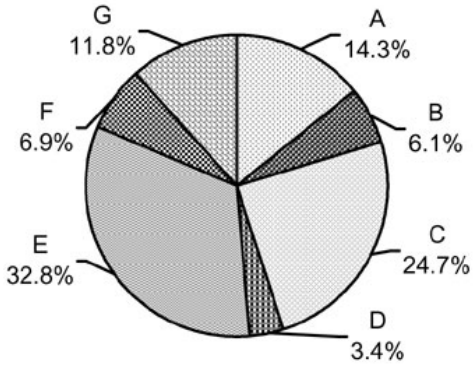
15. For flights parking at the same terminal, the shortest difference (in minutes) between the ETD of one flight and the ETA of another flight is
(A) 4 (B) 7 (C) 13 (D) 15

16. What is the maximum number of terminals simultaneously vacant at any time between 06:54 and 13:02?
(A) 1 (B) 2 (C) 3 (D) 4

Directions for questions 17 to 19: These questions are based on the following information.

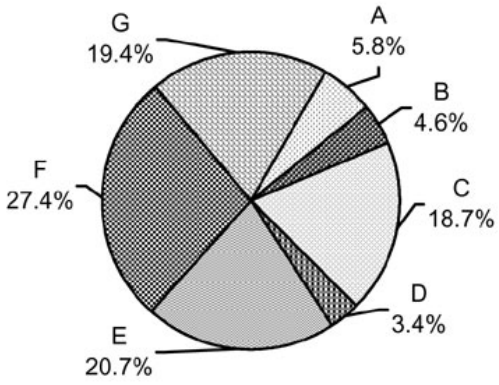
The following pie charts give the details by quantity and value of fresh fruits exported.

Quantity of Fresh Fruits Exported



Total = 44.4 million tonnes

Value of Fresh Fruits Exported



Total = ₹81.8 crore

A: Apple B: Banana C: Citrus fruit D: Pomegranate
E: Mango F: Walnut G: Grapes

$$\text{Export price per tonne} = \frac{\text{Value of fruits exported}}{\text{Quantity of fruits exported (in tonnes)}}$$

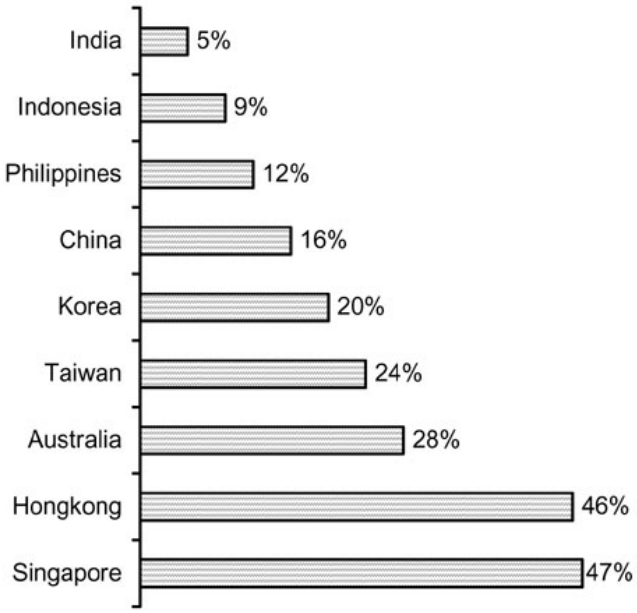
17. For how many varieties of fruits is the export price per tonne less than that of Mango?
(A) 1 (B) 2
(C) 3 (D) None of these

18. Which of the following statements is not true?
(A) Walnut has the highest export price per tonne.
(B) The export price per tonne of Citrus fruit is more than that of Mango.
(C) The export price per tonne of Pomegranate is same as the export price per tonne of all varieties of fruits put together.
(D) The export price per tonne of Grapes is twice that of Pomegranate.

19. For all the varieties of fresh fruits put together, the total quantity of exports form 30% of total production. However, for Mangoes, the quantity of exports form 20% of the total production of Mangoes. Production quantity of Mangoes forms what percentage of the total production of all the varieties of fresh fruits put together?
(A) 47.3% (B) 51.4%
(C) 49.2% (D) 55.3%

Directions for questions 20 and 21: These questions are based on the following information.

Proportion (in %) of sales volume of laptops out of the total sales volume of PCs in each of nine countries in 2004



Total Sales volume of PCs in a country = Sales volume of Laptops + Sales volume of Desktops

20. If in 2004, average price of a laptop in India is ₹45,000 and that of a desktop in India is ₹25,000, what is the value of the total PC market in India given that 28,000 laptops were sold in India during that year?
(A) ₹2520 crore (B) ₹1456 crore
(C) ₹1330 crore (D) ₹72.8 crore

21. If in 2004, the total PC sales volumes in China and Australia are in the ratio of 3 : 1, and the prices of desktops in the two countries are in the ratio 2 : 3, what is the ratio of the sales values of desktops in China and Australia in 2004?
(A) 7 : 2 (B) 5 : 2
(C) 7 : 3 (D) 6 : 7

Directions for questions 22 to 30: Answer the questions independently of each other

22. Certain values of x and the corresponding values of y are given below. Which of the following is a possible relation between x and y?

x	6	7	8	9	10	11	13	15
y	115	55	35	25	19	15	10	7

(A) $(x + 4)(y - 3)$ = constant
(B) $(x - 4)(y + 3)$ = constant
(C) $(x - 5)(y + 5)$ = constant
(D) $(x + 5)(y - 4)$ = constant

23. Ten points are marked on a plane such that no three points are collinear. How many triangles can be formed by joining these points?
(A) 120 (B) 45 (C) 240 (D) 210

24. A sum amounts to three times its initial amount in three years at a certain rate of interest, compounded annually. If in nine years the amount becomes K times the initial amount, then K is
(A) 26 (B) 27 (C) 9 (D) 81

25. The area (in sq. units) of the region bounded by the lines $2x - y + 2 = 0$, $2x + y - 2 = 0$ and the x-axis is
(A) 1/2 (B) 1 (C) 2 (D) 4

26. Ajay was walking along a straight and narrow road. He stopped at a point and looked ahead and noticed that there were three stones, in a straight line, along the road, situated at a distance of 5 m, 6.6 m and 7.8 m from him. How much further should Ajay walk in order to minimise the sum of the distances of the three of stones from him?
(A) 5.8 m
(B) 6.4 m
(C) 6.8 m
(D) None of these

27. During a summer vacation of 31 days, Ankit played at most one of the games between Cricket and Football on each day. He plays Cricket only in the mornings and Football only in the evenings. If he did not play cricket on 18 days and did not play football on 21 days, on how many days did he play neither of the games?
(A) 10 (B) 8 (C) 9 (D) 7

28. There are three measuring jars J_1, J_2 and J_3. First J_3 is filled with water and then emptied into an empty vessel A. Then J_2 and J_3 are both filled with milk and emptied into another empty vessel B. Finally J_1 is filled with milk drawn from B. If the capacity (in litres) of J_1 is at least 3 and at most 8, that of J_2 is at least 6 and at most 12, and that of J_3 is at least 7 and at most 14, then the volume of water in A as a percentage of the volume of milk in B is at most
(A) 116.67% (B) 140%
(C) 132.8% (D) 107.69%

29. If $f(x + y) = \frac{f(x)+f(y)}{1-f(x)f(y)}$ and $f(k) = 2-\sqrt{3}$, find the value of $f(4k)$.
(A) $\sqrt{3}$ (B) 1
(C) $\frac{1}{\sqrt{3}}$ (D) $8\sqrt{3}$

30. In triangle PQR, $\angle PQR = 30°$ and $\angle PRQ = 45°$. If S is a point on QR such that QS : QR = 2 : 5, then find the ratio of the area of triangle PQS to that of triangle SPR.
(A) $\sqrt{3} : 2$ (B) $\sqrt{2} : 3$
(C) 3 : 2 (D) 2 : 3

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 that context.

1. (A) He said he understood his people's concerns but he blamed the unrest on miscreants and agitators, declaring that protests had grown so loud only because he himself had magnanimously granted rights to free expression.
(B) Egyptian society ripened for a sudden outburst because Mr.Mubarak failed to improve the lot of Egypt's poorest very much, throttled meaningful evolution and let his police humiliate victims with impunity.
(C) While it is true that during his rule Egyptians spoke more freely it was not because Mr.Mubarak's regime allowed the airing of critical views but because new technologies made it impossible for the state to retain the information monopoly it once enjoyed.
(D) Mr.Mubarak was slow to respond throughout the crisis but when he finally spoke, after midnight on January 28th, a day when hundreds of thousands across the breadth of Egypt had battled furiously with his police, it was with a husky voice and the petulance of a master betrayed by bungling servants.

Directions for questions 2 to 4: Read the following passage and answer the questions that follow it.

Certainly, the internet is the most postmodern thing on the planet. The immediate consequence in the West seems to have been the breeding of a generation more interested in social networking than social revolution. But, if we look behind that, we find a secondary reverse effect – a universal yearning for some kind of offline authenticity. We desire to be redeemed from the grossness of our consumption, the sham of our attitudinizing, the teeming insecurities on which social networking sites were founded and now feed. We want to become reacquainted with the spellbinding narrative of expertise. If the problem for the postmodernists was that the modernists had been telling them what to do, then the problem for the present generation is the opposite: nobody has been telling us what to do.

If we tune in carefully, we can detect this growing desire for authenticity all around us. We can see it in the specificity of the local food movement or the repeated use of the word "proper" on gourment menus. We can hear it in the use of the word "legend" as applied to anyone who has actually achieved something in the real world. We can recognize it in advertising campaigns such as for Jack Daniel's, which ache to portray not rebellion but authenticity. We can identify it in the way brands are trying to hold on to, or take up, an interest in ethics, or in a particular ethos. A culture of care is advertised and celebrated and cherished. Values are important once more; the values that the artist puts into the making of an object as well as the values that the consumer takes out of the object. And all of these striven-for values are separate from the naked commercial value.

Go deeper still and we can see a growing reverence and appreciation for the man or woman who can make objects well. We note a new celebration of meticulousness, such as in the way Steven Wessel makes his extraordinary handmade flutes out of stainless steel. Gradually we hear more and more affirmation for those who can render expertly, the sculptor who can sculpt, the ceramist, the jeweler, even the novelist who can actually write. Jonathan Franzen is the great example here: a novelist universally lauded, raised almost to the status of a universal redeemer, because he eschews the evasions of genre or historical fiction or postmodern narratorial strategies and instead tries to say something complex and intelligent and telling and authentic and well-written about his own time. It's not just the story, after all, but how the story is told.

These three ideas, of specificity, of values and of authenticity, are at odds with postmodernism. We are entering a new age. Let's call it the Age of Authenticism and see how we get on.

2. The "reverse effect" mentioned in the passage refers to which of the following?
(A) An exasperation with a false sense of urgency and a yen for eternity
(B) An exasperation with the internet and a return to the good old book
(C) An ennui with fakes and a quest for reality
(D) A revulsion for shams and a search for sincerity

3. The author of the passage mentions the flutes of Wessel most probably in order to
(A) marvel at the intricate design of an exquisitely manufactured product.
(B) appreciate the industry involved in manual labour.
(C) express an unqualified admiration for the fine arts and the performing arts.
(D) opine that commitment to quality is paramount in any work of art.

4. The novel advertisement for Jack Daniel's, as described in the passage, would prompt which of the following reactions?
(A) It will be lauded by critics for its expert opinion.
(B) It will be perceived by consumers as an endorsement for a pure product.
(C) It will be considered as rebelling against the norms of the time.
(D) It will be an embodiment of quintessential brand management.

Directions for questions 5 and 6: 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.

5. (a) But lately, like a Bollywood villain who just refuses to die, the old India has made a terrifying reappearance, the main reason is the country's desperate politics.

(b) But it is not too much of a stretch to say that since independence in 1947 there have been only two kinds of Indian economy.
(c) The country seemed destined to enjoy a long spurt of turbo-charged growth, thanks to its favourable demography, fired up firms, gradual reforms and willingness to save and invest.
(d) India is a land of large numbers: a place of over a billion people, a million communities and a thousand different tongues.
(e) The first produced slothful growth, mind-bending red tape and suffocating bureaucracy while the second revved up gradually after the liberalization in the 1990s, so that by the mid-2000, India was a land of surging optimism - open and full of entrepreneurs who overcame a retreating but still cranky public sector.

(A) dcbea
(B) cadbe
(C) cdbea
(D) dbeca

6. (a) Oil is expensive because anaemic supply and soaring Asian demand have led to an unusually tight market, so a series of smallish supply disruptions, including sanctions on Iran has had a big effect.
(b) The purpose of the SPR is to dampen the effects of catastrophic supply shocks, not to ease a president's political difficulties.
(c) Yet a barrel of oil is only 15% more expensive than at the start of the year: nastly, but hardly a grave threat and Saudi Arabia, the only country with much spare capacity, has promised to ensure that the world has adequate supplies.
(d) No such shock has happened.
(e) The International Energy Agency's likely opposition points to why Obama should leave the Strategic Petroleum Reserve alone.

(A) ebdac
(B) acbed
(C) bedca
(D) ecbad

Directions for questions 7 to 9: Read the following passage and answer the questions that follow it.

It was about forty yards to the gallows. I watched the bare brown back of the prisoner marching in front of me. He walked clumsily with his bound arms, but quite steadily, with that bobbing gait of the Indian who never straightens his knees. And once, in spite of the men who gripped him by each shoulder, he stepped slightly aside to avoid a puddle on the path.

It is curious, but till that moment I had never realized what it means to destroy a healthy, conscious man. When I saw the prisoner step aside to avoid the puddle, I saw the mystery, the unspeakable wrongness, of cutting a life short when it is in full tide. This man was not dying, he was alive just as we were alive. All the organs of his body were working – bowels digesting food, skin renewing itself, nails growing, tissues forming – all toiling away in solemn foolery. His eyes saw the yellow gravel and the grey walls, and his brain still remembered, foresaw, reasoned – reasoned even about puddles. He and we were a party of men walking together, seeing, hearing, feeling, understanding the same world; and in two minutes, with a sudden snap, one of us would be gone – one mind less, one world less.

We stood waiting, five yards away. The warders had formed in a rough circle round the gallows. And then, when the noose was fixed, the prisoner began crying out to his God. It was a high, reiterated cry of 'Ram! Ram! Ram!', not urgent and fearful like a prayer or a cry for help, but steady, rhythmical, almost like the tolling of a bell. The hangman, still standing on the gallows, produced a small cotton bag like a flour bag and drew it down over the prisoner's face. But the sound, muffled by the cloth, still persisted, over and over again: 'Ram! Ram! Ram! Ram! Ram!'

The hangman climbed down and stood ready, holding the lever. The steady, muffled crying from the prisoner went on and on, 'Ram! Ram! Ram!' never faltering for an instant. The superintendent was slowly poking the ground with his stick; perhaps he was counting the cries, allowing the prisoner a fixed number fifty, perhaps, or a hundred. Everyone had changed colour. The Indians had gone grey like bad coffee, and one or two of the bayonets were wavering. We looked at the lashed, hooded man on the drop, and listened to his cries, each cry another second of life; the same thought was in all our minds: oh, kill him quickly, get it over, stop that abominable noise!

Suddenly the superintendent made up his mind. Throwing up his head he made a swift motion with his stick, 'Chalo!' he shouted almost fiercely.

There was a clanking noise, and then dead silence. The prisoner had vanished, and the rope was twisting on itself. We went round the gallows to inspect the prisoner's body. He was dangling with his toes pointed straight downwards, very slowly revolving, as dead as a stone.

The superintendent reached out with his stick and poked the bare body; it oscillated, slightly, 'He's all right,' said the superintendent. He backed out from under the gallows, and blew out a deep breath. The moody look had gone out of his face quite suddenly. He glanced at his wrist watch. 'Eight minutes past eight. Well, that's all for this morning, thank God.'

7. The primary purpose of the author is to
(A) make a case against capital punishment.
(B) reinterpret an event on ethical lines.
(C) propose an alternative to capital punishment.
(D) illustrate the racist nature of colonialism.

8. The author suggests that the attitude of the police who supervised the hanging most closely resembles which of the following?
(A) They are doing their duty in a perfunctory manner.
(B) Their bravado conceal a deep moral uneasiness.

(C) They are intimidated by the religious fervour of the prisoner.
(D) They treat the execution as an unpleasant but routine piece of business.

9. The author's mention of 'He's all right' is meant to
(A) show how human beings can become insensitive to the horror of taking life.
(B) reveal how wrong it is to destroy a healthy human being.
(C) demonstrate how the superintendent treats the execution as a nuisance.
(D) redeem the superintendent who is doing his job, however unpleasant.

Directions for questions 10 and 11: 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 spelling, punctuation, grammar and usage. Then, choose the **most appropriate** option.

10. (a) Two decades ago spies and system administrators only had to worry about passwords
(b) But today you have to enter one to do humdrum things even like turning on your computer,
(c) download an album or buy a book online.
(d) No wonder many people use a single, simple password for everything,
(e) even if, in the process, they compromise on security.
(A) b and d (B) d and e
(C) a and c (D) a and e

11. (a) Ride the Vivek express: a newish train service that trundles 4,300 kilometres from the tea-estate of India's far north-east
(b) to its pointy southern tip, some 80 bone-breaking hours away,
(c) and you embark with two things: a sore back and an abiding optimism.
(d) The Indians travelling on board who are well-off enough for a long distance train fare,
(e) but not rich enough to fly are full of hope.
(A) a and b (B) d and c
(C) only b (D) a, c and e

Directions for questions 12 and 13: There are two blanks in each of the following sentences. From the pairs of words given below the sentence, choose the pair that fills in the blanks most appropriately.

12. The tiny island state of Singapore has a well-deserved _____ as a quiet, clean hub for banking, lawyering and gold; yet beyond the fairways it _____ with weapons
(A) prestige . . . . seethes
(B) status . . . . swarms
(C) character . . . . teems
(D) reputation . . . . bristles

13. Passwords are _____ in computer security, all too often, they are also _____.
(A) essential . . . . valid
(B) omnipotent . . . . effective
(C) ubiquitous . . . . ineffective
(D) pervasive . . . . potent

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

Eklavya Public School owns exactly six buses, each of a different model, which it runs on five different routes. The capacity of each bus and the number of students enrolled for bus service in each route is given in the tables below.

Bus model	Capacity
Volvo	64
Star Bus	55
Mazda	40
Leyland	54
Ruby Bus	45
Eicher	30

Route Number	Number of students enrolled
1	30
2	35
3	40
4	32
5	24

Further,
(i) on any given day, only one bus runs on each route
(ii) at least 80% of the students enrolled for the bus service in each route will board the bus on any day.
(iii) any bus, except Star Bus, is run on a route only if the least possible occupancy of the bus is 50% of its capacity or more.
(iv) a bus is not run in a route if the number of students enrolled in that route is more than the capacity of the bus.
(v) Star Bus can be used on all routes, except route 5, but it must be used only on those days on which any of the other buses is sent for servicing.

Note: Assume that not more than one of the buses is sent for servicing on any given day and that all routes are covered every day.

14. If on a certain day no bus was sent for servicing, and there are 32 students in Mazda, then which route was Mazda assigned to?
(A) 2 (B) 4 (C) 3 (D) 1

15. If Eicher carries 25 students on a certain day, then which of the following is definitely false?
(A) No bus was sent for servicing on that day
(B) Volvo was sent for servicing on that day
(C) Mazda was sent for servicing on that day
(D) Ruby bus was sent for servicing on that day

16. If Leyland was sent for servicing on a particular day, then what is the maximum possible difference between number of students in Star Bus and the number of students in Eicher?
(A) 20 (B) 10 (C) 12 (D) 15

17. If Mazda carries 36 students on a particular a day, then which of the following statements can be true?
(A) Ruby Bus carries 33 students
(B) Leyland carries 26 students
(C) Star Bus carries 27 students
(D) Eicher carries 28 students

Directions for questions 18 and 19: Answer the questions on the basis of the information given below.

Seven friends – Pavel Chekov, Hikaru Sulu, Scotty, Majel Barett, Spock, Nyota Uhura, Grace Lee – are to be seated in a row as per the following conditions:

(i) Exactly one person must be seated between Hikaru Sulu and Pavel Chekov.
(ii) Grace Lee must be seated to the left of Hikaru Sulu.
(iii) Scotty should be seated to the right of Majel Barett.
(iv) Nyota Uhura should be seated in the second position from left.
(v) Scotty should be either the fifth or the sixth person from left.
(vi) Hikaru Sulu should be seated to the left of Pavel Chekov.

18. Which of the following is definitely true?
(A) If Grace Lee is at the leftmost end of the row, Majel Barett must be in the 3rd position from left.
(B) If Hikaru Sulu doesn't occupy the 3rd position either from left or right, then Pavel Chekov occupies the 2nd position from right.
(C) If Spock is seated at the extreme right end, then Grace Lee is located at the extreme left end.
(D) If Majel Barret is seated in the middle of the row, then Pavel Chekov is seated in the fifth position from left.

19. How many distinct seating arrangements are possible?
(A) 8 (B) 7 (C) 9 (D) 10

Directions for questions 20 and 22: Answer the questions on the basis of the information given below.

Koman, Royal Mint, Goshobo, Frapin and Krennica are five companies with distinct turnovers in a certain period. The companies are ranked from 1 through 5, in decreasing order of their turnovers, with 1 being assigned to the company with the highest turnover. The following additional information is known:

(i) The sum of Koman's and Krennica's ranks is equal to that of Goshobo's and Frapin's ranks.
(ii) Goshobo is not the company with the least turnover and Koman is not the company with the highest turnover.
(iii) Koman's turnover is not lower than Goshobo's and Frapin's turnover is not higher than Royal Mint's.

20. Which company has the highest turnover?
(A) Krennica (B) Goshobo
(C) Koman (D) Royal Mint

21. If Frapin's turnover is lower than Goshobo's, then the sum of the ranks of which of the following combinations is a perfect square?
(A) Royal Mint and Koman
(B) Goshobo and Krennica
(C) Krennica and Frapin
(D) Frapin and Koman

22. If Goshobo's turnover is higher than Frapin's, which of the following is true?
(A) Frapin has a higher turnover than Koman.
(B) The sum of the ranks of Goshobo and Koman is equal to the rank of Krennica.
(C) The sum of the ranks of Frapin and Krennica is a prime number.
(D) Royal Mint does not have a higher turnover than Goshobo.

Directions for questions 23 and 24: In each of the following questions, the word in capitals is used in four different ways, A to D. Choose the option in which the usage of the word is INCORRECT or INAPPROPRIATE.

23. DIG
(A) You will have to dig deep to come up with the evidence you are searching for.
(B) It took the police several hours to dig out a dozen people from the rubble of the building.
(C) They will have to dig the field before laying a new surface.
(D) The youngsters didn't need much persuasion to dig into the meal spread on the table.

24. HUMAN
(A) Economics must show itself to be a science with a human face.
(B) Many animals have much sharper senses than human.
(C) No matter how good the technology there is always room for human error.
(D) Human Resource personnel must always take care to be the human face of the organisation they represent.

Directions for questions 25 and 26: Each of the following questions has a paragraph from which the last sentence, or part thereof, has been deleted. From the given options, choose the sentence that completes the paragraph in the most appropriate way.

25. Statistics seldom do justice to Africa. Take beer consumption. The average African sips a mere 8 litres of commercially produced beer a year. Compared with the 70 litres or so quaffed by the average American; it sounds like Africans are a bunch of party poopers. _____
(A) And so they are.
(B) But this is not so.
(C) But the Africans chug admirable quantities of home brew.
(D) And the Africans brew at home from Sorghum, millet or anything fermentable.

26. Fashion firms have their clothes made in China. This is cheap but managing a long supply chain is hard. Inditex, by contrast, sources its products from Spain, Portugal and Moroco. This costs more but because the supply chain is short, it can react quickly to new trends. Instead of betting on tomorrow's hot look, Inditex can wait to see what customers are actually buying and make that. _____
(A) While others are stuck with unwanted stock, Inditex sells at full price.
(B) Yesterday's catch must be discounted and may not sell at all.
(C) Will its fast-fashion model be copied, or bettered, by others?
(D) Europe is stagnant and ageing – Inditex needs new markets.

Directions for questions 27 to 30: Read the following passage and answer the questions that follow it.

It shouldn't surprise us that the poor choose their foods not mainly for their cheap prices and nutritional value, but for how good they taste. George Orwell, in his masterful description of the life of poor British workers in 'The Road to Wigan Pier', observes: The basis of their diet, therefore, is white bread and margarine, corned beef, sugared tea and potatoes – an appalling diet. Would it not be better if they spent more money on wholesome things like oranges and whole meal bread or if they even saved on fuel and ate their carrots raw? Yes, it would, but the point is that no ordinary human being is ever going to do such a thing. The ordinary human being would sooner starve than live on brown bread and raw carrots. And the peculiar evil is this, that the less money you have, the less inclined you feel to spend it on wholesome food. A millionaire may enjoy breakfasting off orange juice and Ryvita biscuits; an unemployed man doesn't. When you are unemployed, you don't want to eat dull wholesome food. You want something a little bit "tasty." There is always some cheaply pleasant thing to tempt you.

The poor often resist the wonderful plans we think up for them because they do not share our faith that those plans work, or work as well as we claim. We shouldn't forget, too, that other things may be more important in their lives than food. Poor people in the developing world spend large amounts on weddings, dowries, and christenings. Part of the reason is probably that they don't want to lose face, when the social custom is to spend a lot on those occasions. In South Africa, poor families often spend so lavishly on funerals that they skimp on food for months afterward.

And don't underestimate the power of factors like boredom. Life can be quite dull in a village. There is no movie theater, no concert hall. And not a lot of work, either. In rural Morocco, Oucha Mbarbk and his two neighbors told us they had worked about 70 days in agriculture and about 30 days in construction that year. Otherwise, they took care of their cattle and waited for jobs to materialize. All three men lived in small houses without water or sanitation. They struggled to find enough money to give their children a good education. But they each had a television, a parabolic antenna, a DVD player, and a cell phone.

This is something that Orwell captured as well, when he described how poor families survived the Depression: Instead of raging against their destiny they made things tolerable by reducing their standards.

But they don't necessarily lower their standards by cutting out luxuries and concentrating on necessities; more often it is the other way around--the more natural way, if you come to think of it. Hence the fact that in a decade of unparalleled depression, the consumption of all cheap luxuries has increased.

These "indulgences" are not the impulsive purchases of people who are not thinking hard about what they are doing. Oucha Marbk did not buy his TV on credit; he saved up over many months to scrape enough money together, just as the mother in India starts saving for her young daughter's wedding by buying a small piece of jewelry here and a stainless steel bucket there.

27. The primary purpose of the passage is to
(A) discuss why the poor don't invest in what would really make their lives better.
(B) summarize the findings on the consumption patterns of the poor.
(C) review programs to alleviate poverty traps.
(D) contrast dietetic theories on the poor.

28. As understood from the passage, which of the following is NOT an assumption about the poor?
(A) The poor desperately need food to survive.
(B) The poor eat as much as they can given an income.
(C) The money the poor spend on food is put into getting more nutrition.
(D) The poor seek to satisfy their palate when they spend on food.

29. Which of the following is a point the author makes that is in agreement with Orwell's view on how the poor cope with adversity?
(A) The poor skimp on the essentials and enjoy life instead.
(B) The poor defy fate by splurging on non-affordable luxuries.
(C) The poor focus on the bare necessities, ignoring frills.
(D) The poor embrace their situation by giving importance to joys which are not of a materialistic nature.

30. The passage implies which of the following as true of the British workers in "The Road to Wigan Pier"?
(A) They consumed less of wholesome food because it was cheap.
(B) They did not realize the value of feeding themselves as they did not have the right information.
(C) They were more concerned about enjoying their food than about healthy living.
(D) They were ignorant of the health costs of unhygienic food.

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

(Key and Solutions for AIMCAT1317)

Key

SECTION – I

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

SECTION – II

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

Solutions

SECTION – I

Solutions for questions 1 to 12:

1. Let the selling price of the article be x. Then marked price = 1.25x and the cost price = 0.625x.
∴ Percentage of profit on selling the article
$= \frac{0.375x}{0.625x}(100\%) = 60\%$ Choice (C)

2. The favourable combinations are (1, 2), (2, 3), ……., (24, 25).
∴ Required probability
$= \frac{2\times 24}{2\times {}^{25}C_2} = \frac{2}{25}$ Choice (A)

3. A system has no solutions, i.e., the equations are inconsistent, if the coefficient in one of them can be expressed as a certain combination of the coefficient in the other two, but the constant term is not equal to the corresponding combination of the constants in the other two.
Let's try to express the coefficient of C in term of those of (1) and (3)
2p + 3q = 1 --------- (D)
p + q = 1 --------- (E) and
3p – q = 7 --------- (F)
Solving (4) and (5), we get q = –1 and p = 2.
We see that (F) is also satisfied.
Therefore, 2(A) – (B)
⇒ x + y + 7z = 2(4) – 5 = 3
∴ If C is any number other than 3, there is no solution.
Choice (D)

4. Since the number of bacteria that perished in the first two hours is same as that which perished after that, it follows that exactly half of the initial bacteria perished in the first two hours.
Assuming N bacteria were present at the beginning,
Number of bacteria perishing in 1st hour = KN
Number of bacteria perishing in 2nd hour = K(1 – K)N
$\therefore KN + K(1-K)N = \frac{N}{2}$
$\Rightarrow 4K + K^2 - 1 = 0$
$\Rightarrow K = 1 \pm \frac{1}{\sqrt{2}}$
However, K cannot be greater than 1. Hence, $K = 1 - \frac{1}{\sqrt{2}}$
Now, $\frac{N}{2}$ bacteria were present at the beginning of the third hour (i.e., after the first two hours)
Hence, the percentage that will remain after the 3rd hour
$= \frac{N}{2}\left(1-\left(1-\frac{1}{\sqrt{2}}\right)\right) = \frac{N}{2\sqrt{2}} \cong 35.4\%$ of N. Choice (D)

5. 90 leaves a remainder of 12 (or –1) when divided by 13.
$\therefore 90^n$ leaves a remainder of 12^n(or $-1)^n$ when divided by 13.
$\therefore 90^{91}$ leaves a remainder of $(-1)^{91} = -1$, i.e., 12, when divided by 13.

Alternative solution:
$90^{91} = [(13)(7) - 1]^{91}$
In the expansion of $[(13)(7) - 1]^{91}$, every term contains 13 except the last. The last term is $(-1)^{91} = -1$.
∴The number 90^{91} will be of the form $13k - 1$.
∴The remainder when it is divided by 13 is –1 or 12.
Choice (C)

6. Given that DE and FG are both parallel to B.
⇒ DE is parallel to FG.
∴ ΔADE ~ ΔAGF
Since the area of ΔADE is equal to the area of the quadrilateral DEGF, the area of ΔAFG is twice the area of the ΔADE.

$$\frac{\text{Area of } \Delta ADE}{\text{Area of } \Delta AFG} = \left(\frac{AD}{AF}\right)^2 = \left(\frac{AE}{AG}\right)^2 = \left(\frac{DE}{FG}\right)^2$$

$$\therefore \left(\frac{DE}{FG}\right)^2 = \frac{1}{2}$$

$$\Rightarrow \frac{DE}{FG} = \frac{1}{\sqrt{2}}$$ Choice (A)

7. $|x| + \frac{2}{|x|} - 3 = 0 \Rightarrow |x|^2 - 3|x| + 2 = 0$

$\Rightarrow (|x| - 1)(|x| - 2) = 0$

$\Rightarrow |x| = 1$ or $|x| = 2$

$\Rightarrow x = \pm 1$ or ± 2.

Hence, the graph should have four points of intersection with the x-axis.

Option (A) is the correct representation. Choice (A)

8. Let the number of cats be c.

Number of mice eaten by each cat must be more than c say $c + k$.

Total number of mice = $c(c + k) = 999919$

The nearest perfect square is $(1000)^2 = 1000000$.

Now $99919 = 10000 - 81 = (1000)^2 - (9)^2$

$= (1000 + 9)(1000 - 9) = (1009)(991)$

Each cat eats more mice than the total number of cats present. So, there were 991 cats and each cat eats 1009 mice. This is the only possible solution as both 991 and 1009 are prime numbers. Choice (D)

Alternative solution:

Since each cat ate the same number of mice, the total number of mice must be divisible by the number of cats. From the choices, none of 667, 899, 1147 (In fact, since mice > cats, number of cats cannot exceed 1000, as $1000 \times 1000 > 999919$. Hence 1147 cannot be the answer) exactly divides 999919 (to be found out by dividing). Hence Choice (D).

9. If the sum of some numbers is a constant, then the sum of their n^{th} powers is minimum when the numbers are equal. (when n is an even natural number),

Let a, b and c be the three integers.

Given $a + b + c = 10$

So, $a^4 + b^4 + c^4$ will have minimum value when $a = b = c = \frac{10}{3}$. But since this is not possible they must chosen as close to each other as possible.

$(a, b, c) = (3, 3, 4)$ or some other order of the same combination.

$a^4 + b^4 + c^4 = 3^4 + 3^4 + 4^4 = 418$ Choice (C)

10. The three digit numbers satisfying the condition have the form $11a + 9$ and $7b + 2$ where a and b are the respective quotients when the numbers are divided by 11 and 7.

$\therefore 11a + 9 = 7b + 2$

$\Rightarrow \frac{11}{7}a + 1 = b$, the least number satisfying the condition is obtained when both a and b are non-negative integers. When a is 0, $b = 1$. Hence the least number satisfying the condition is 9. The general form of the numbers satisfying the condition = L.C.M (11, 7) K + 9 = 77K + 9, where K is a positive integer.

$100 < 77K + 9 < 1000$

Hence $K > 1\frac{14}{77}$ and $K < 12\frac{67}{77}$

Hence K can take 11 values (i.e., from 2 to 12)

$\Rightarrow$ There are 11 possible such three-digit numbers.

Choice (A)

11. Let the number with the i^{th} student = N_i

Given $N_i = N_{i-1} + N_{i+1}$

Hence the number with 1137^{th} student

$= N_{1137} = N_{1136} + N_{1138}$

$\Rightarrow 16 = -57 + N_{1138}$

$\Rightarrow N_{1138} = 73$

similarly $N_{1135} = -73$

and $N_{1139} = 57$

and $N_{1134} = -16$

and $N_{1140} = -16$

$\therefore$ we see that the series of numbers from N_{1134} onwards is as follows

–16, –73, –57, 16, 73, 57, –16, –73, –57 and so on, with the set of six values repeating continuously. Note that the sum of these six values themselves is zero.

From the pattern, we can say that the number with the student of the form N = 6k + 1 will be –73.

($\because N_{1135} = -73$ and 1135 = 6k + 1)

$\therefore$ we can ignore all students till the highest multiple of six under (or equal to) 2272 i.e, till 2268.

Now only four more students will remain, and they will have the numbers –73, –57, 16 and 73.

Hence, the sum of the numbers with them will be –41.

Choice (D)

12. Given equation 31x + 13y = 75.

(A) (2, 1) satisfies the given equation 31(2) + 13(1) = 75.

Any pair (x, y) satisfying the equation can be expressed in the form (2 – 13K, 31K + 1) where k is an integer.

$\therefore$ When K = 1 (2 – 13(1), 31 + 1) = (–11, 32)

When K = 2 (2 – 13(2), 31(2) + 1) = (–24, 63)

When K = 3 (2 – 13(3), 31(3) + 1) = (–37, 94)

$\therefore$ Option (D) does not satisfy the given equation.

Choice (D)

Solution for question 13:

13. % change in the ratio from 2005-06 to 2006-07

$$= \frac{\left(\frac{715}{421}\right) - \left(\frac{651}{322}\right)}{\left(\frac{651}{322}\right)} \times 100 = 16\%$$

From 2006-07 to 2007-08, it was

$$= \frac{\left(\frac{584}{342} - \frac{715}{421}\right)}{\left(\frac{715}{421}\right)} \times 100 = 0.55\%$$

From 2007-08 to 2008-09, it was

$$= \frac{\left(\frac{672}{426} - \frac{584}{342}\right)}{\left(\frac{584}{342}\right)} \times 100 = 7.62\%$$

From 2008-09 to 2009-10, it was

$$= \frac{\left(\frac{727}{457} - \frac{672}{426}\right)}{\left(\frac{672}{426}\right)} \times 100 = 0.85\%$$

From 2009-10 to 2010-11, it was

$$= \frac{\left(\frac{793}{534} - \frac{727}{457}\right)}{\left(\frac{727}{457}\right)} \times 100 = 6.65\%$$

From 2010-11 to 2011-12, it was

$$= \frac{\left(\frac{1128}{642} - \frac{793}{534}\right)}{\left(\frac{793}{534}\right)} \times 100 = 18.32\%$$

$\therefore$ The highest % change was 18.32%. Choice (A)

Solutions for questions 14 to 16:

The table below gives details of the terminals and the corresponding flights.

T_1			T_2			T_3			T_4		
Flight	ETA	ETD	Flight	ETA	ETD	Flight	ETA	ETD	Flight	ETA	ETD
6E-372	6:20	8:15	SG-916	6:44	9:08	IT-162	7:06	9:10	IT-3184	7:20	8:59
SG-423	8:28	11:23	6E-168	9:22	10:58	IT-345	9:36	11:07	KF-4197	9:06	10:49
IC-724	11:27	13:16	IC-816	11:13	13:10						

14. It can be observed from the above table that IC-724 is parked at terminal T_1. Choice (A)

15. The shortest difference in the ETD of one flight and ETA of another flight in the same terminal is 4 minutes (observed in case of T_1) Choice (A)

16. Between 11:23 and 11:27, terminals T_1, T_3 and T_4 are vacant.
$\therefore$ At most 3 terminals are vacant. Choice (C)

Solutions for questions 17 to 19:

17. It is sufficient to compare the ratio $\frac{20.7}{32.8}$ (i.e., for mango) with the ratios $\frac{27.4}{6.9}, \frac{19.4}{11.8}, \frac{5.8}{14.3}, \frac{4.6}{6.1}, \frac{18.7}{24.7}$ and $\frac{3.4}{3.4}$

By observation, only $\frac{5.8}{14.3}$ (i.e., Apples) is less than $\frac{20.7}{32.8}$. Hence only one variety of fruit. Choice (A)

18. Export price per tonne for walnuts is proportional $\frac{27.4}{6.9}$ which is the highest ratio.
Statement A is true as walnuts has the highest ratio of value to quantity.

Statement B is true as $\frac{20.7}{32.8} < \frac{18.7}{24.7}$

Statement C is true as $\frac{3.4\% \text{ of } x}{3.4\% \text{ of } y} = \frac{x}{y}$

Statement D is not true $\frac{19.4\%}{11.8\%} < 2.\left(\frac{3.4}{3.4}\right)$

Choice (D)

19. Let the total production of all the fresh fruits be 100.
$\Rightarrow$ Exports of fresh fruits = 30
From the 1st pie-chart, exports of mango = 32.8% of exports of all fresh fruits = 32.8% of 30 which is 20% of the production of mangoes.

$\therefore$ 32.8% of 30 = 20% $P_M \Rightarrow P_M = \frac{32.8 \times 30}{20} = 49.2$

Out of the total production of 100, share of mangoes = 49.2 or 49.2%. Choice (C)

Solutions for questions 20 and 21:

20. Ratio of laptops to desktops in India = 5 : 95, i.e., 1 : 19
Given, no. of laptops = 28,000
$\Rightarrow$ No.of desktops = 28000×19.
$\therefore$ Total value = value of laptops + value of desktops
$= (28000 \times 45000) + (28000 \times 19 \times 25000)$
$= 28 \times 10^6 \times 5\,(9 + 95) = 10^6 \times 140 \times 104$
= ₹1456 crore Choice (B)

21. Ratio of total pc sales in china and Australia = 3 : 1
$\therefore$ ratio of desktop sales in chine and Australia
$= 3 \times 84 : 1 \times 72 = 252 : 72 = 63 : 18$
$\therefore$ ratio of value of desktop market = $63 \times 2 : 18 \times 3$
$= 126 : 54 = 7 : 3$. Choice (C)

Solutions for questions 22 to 30:

22. We can list the values of the expressions which appear in the options.

X	y	x + 4	y – 3	x – 4	y + 3	x – 5	y + 5	x + 5	y – 4
6	115	10	112	2	118	1	120	11	111
7	55	11	52	3	58	2	60	12	51
8	35					3	40		
9	25					4	30		
10	19					5	24		
11	15					6	20		
13	10					8	15		
15	7					10	12		

We can see that $(x - 5)(y + 5)$ is a constant.
Choice (C)

23. Every three non-collinear points in a plane form a triangle. Hence, the number of triangles that can be formed by using the 10 points is $^{10}C_3 = 120$. Choice (A)

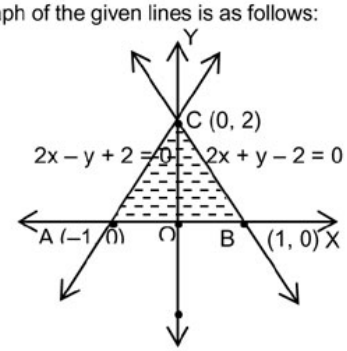
24. Let the principal, amount, rate of interest and number of years be P, A, r and n respectively.
Given, A = 3P

where $R = \left(1 + \frac{r}{100}\right)$ i.e., $3P = PR^3$

$\therefore R = 3^{\frac{1}{3}} \Rightarrow R^9 = \left(3^{\frac{1}{3}}\right)^9 = 3^3 \Rightarrow R^9 = 27$

$\therefore PR^9 = 27P$ Choice (B)

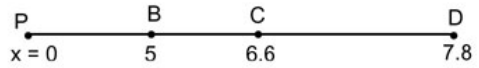
25. The graph of the given lines is as follows:



Δ ABC is the required region.
$\therefore$ The area of the required region is

$\frac{1}{2} \times AB \times OC = \frac{1}{2} \times 2 \times 2 = 2$ sq. units Choice (C)

26.



Let Ajay's initial position be chosen as the origin.
Let x represent the distance of Ajay's new position from the origin at P.
Then, the distance between Ajay and the three stones can be represented as $|x-5|$, $|x-6.6|$ and $|x-7.8|$.
∴ To minimize the sum of distances, the following should be minimized.
$|x-5| + |x-6.6| + |x-7.8|$
Distance of Ajay from the three stones could be minimum only when he is located at the location of the 2nd stone, which is 6.6 m away from Ajay's initial position.
∴ Ajay should walk a further 6.6 m. Choice (D)

27. Given Ankit played Cricket on (31 – 18) days and Football on (31 – 21) days.
As he did not play both the games on any day, he played on 13 + 10 = 23 days.
∴ He played neither of the games on (31 – 23) days i.e. on 8 days. Choice (B)

28. Let the capacities of the three jars J_1, J_2 and J_3 be V_1, V_2, V_3 respectively.
Volume of water in A = capacity of $J_1 = V_1$
Volume of milk in B = $V_2 + V_3 - V_1$

$$\therefore \text{Required ratio} = \frac{V_3}{V_2 + V_3 - V_1}.$$

Given $3 \le V_1 \le 8$
$6 \le V_2 \le 12$
$7 \le V_3 \le 14$

$$\frac{V_3}{V_2 + V_3 - V_1} = \frac{1}{\left(\frac{V_2}{V_3} - \frac{V_1}{V_3} + 1\right)}$$

This ratio is maximum when the denominator is minimum.
This occurs when $V_2 - V_1$ is as negative as possible and V_3 is the minimum possible.
When $V_2 = 6$, $V_1 = 8$ and $V_3 = 7$,

the ratio is $\frac{1}{\left(\frac{6-8}{7} + 1\right)} = \frac{7}{5} = 140\%$ Choice (B)

29. Given $f(x+y) = \frac{f(x) + f(y)}{1 - f(x)f(y)}$

$f(k) = 2 - \sqrt{3}$

$$\therefore f(2k) = \frac{f(k) + f(k)}{1 - [f(k)]^2}$$

$$= \frac{2\left(2-\sqrt{3}\right)}{1 - \left(2-\sqrt{3}\right)^2} = \frac{4 - 2\sqrt{3}}{1 - 4 - 3 + 4\sqrt{3}} = \frac{4 - 2\sqrt{3}}{-6 + 4\sqrt{3}}$$

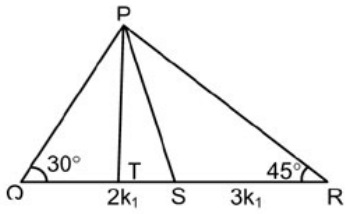
$$= \frac{2\left(2-\sqrt{3}\right)}{2\sqrt{3}\left(-\sqrt{3}+2\right)} = \frac{1}{\sqrt{3}}$$

$$f(4k) = \frac{f(2k) + f(2k)}{1 - [f(2k)]^2}$$

$$= \frac{\frac{2}{\sqrt{3}}}{1 - \left(\frac{1}{\sqrt{3}}\right)^2} = \sqrt{3}$$

Alternate method:
The given relation is satisfied by $f(x) = \tan x$
$f(k) = 2 - \sqrt{3} = \tan 15°$
$\therefore f(4k) = \tan 60° = \sqrt{3}$ Choice (A)

30.



$$\frac{QS}{QR} = \frac{2}{5} \Rightarrow \frac{QS}{SR} = \frac{2}{3}$$

The height for the triangles PQS and PRS is the same and is equal to PT.
∴ Ratio of areas = Ratio of bases.

$$\therefore \frac{\Delta PQS}{\Delta PSR} = \frac{2k_1}{3k_1} = \frac{2}{3}$$ Choice (D)

Note that the information regarding the angles is redundant.

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

SECTION – II

Solution for question 1:

1. D is the first sentence as it begins with the name– Mr.Mubarak. Where as A and C begin with 'He' and 'his'. A follows D with what Mr.Mubarak said when he spoke. C links to A as it gives the true reason of why the Egyptians spoke more freely, thus contradicting what Mr.Mubarak said in A. D A C form a para. B gives the reason for the uprising in Egypt and does not fit into this para.
Choice (B)

Solutions for questions 2 to 4:

Number of words and Explanatory notes for RC:

Number of words : 466

2. The reverse effect is simply from 'online sham' to 'offline authenticity.' This is best expressed in choice (D). Choice (A) is not clear. Choice (B) brings the 'book' into the picture without proper reason. Choice (C) understates the issue– 'ennui' (boredom) is no substitute for 'grossness' and 'insecurities'. Choice (D)

3. The said flutes are a handmade work of art, in this age of mass production. This makes choice (D) appropriate. Choice (A) does not mention the handicraft involved, choice (B) skips the artistic touch, choice (C) is too broad in scope.
Choice (D)

4. Refer to para 2 – the said advertisement portrays authenticity, hence will be perceived to be so as stated in choice (B). Choice (A) is not clear about "expert opinion." Choice (C) is negated by ….. not rebellion but authenticity. Choice (D) is misleading. Choice (B)

Solutions for questions 5 and 6:

5. Sentence (d) is apt as the opening sentence since it introduces India in all its variety. Sentences (a) and (b) both begin with 'but'. (b) is apt to follow (d) since it presents a contrast – from the multifarious variety to just two. Sentence (a) presents a contrast to (c) – while (c) speaks of the expected long period of growth (a) shows how the 'old India' has reappeared. (d, b) go together as also (ca). (e) follows (b) describing the features of the two India. dbeca is thus the sequence. Choice (D)

6. Sentence (b) can only come after (e) – since the former says SPR and the latter has the full form. Further (b) refers to a President's political difficulties which can follow Obama in (e). (eb) could go together and (d) follows (b) linked by

'shock'. (ac) go together giving reason why the SPR should remain untouched. The sequence is, therefore, ebdac.
Choice (A)

Solutions for questions 7 to 9:

Number of words and Explanatory notes for RC:

Number of words : 569

7. The passage is a case against "cutting a life short when it is in full tide," (para 2) and terms this act an "unspeakable wrongness." Choice (A) presents this view. Choice (C) is beyond the scope of the passage. Choices (B) and (D) cannot be inferred from the passage. Choice (A)

8. The statement "Well, that's all this morning, thank God," clearly points to choice (D) as the answer. Choice (A) undermines the distaste of the supervisor. Choices (B) and (C) are not suggested. Choice (D)

9. The irony in the statement "He's all right" is that the person is confirmed dead.
It reveals the callous approach of the superintendent.
Choice (A) is apt. choice (B) is not relevant to the question. Nor is choice (C). Choice (D) is not true, as the superintendent's redemption is beside the point.
Choice (A)

Solutions for questions 10 and 11:

10. Part (a) is incorrect because 'only' should precede, not follow, the word/phrase it qualifies. The sentence refers to 'only spies and system administrators' not 'only had to'. Part (b) is incorrect-'even' precedes and qualifies 'humdrum things'. Part (c) is incorrect - it should be 'downloading' and 'buying' to be parallel to 'turning'. Part (d) and (e) are correct. Choice (B)

11. In part (a) it should be 'tea-estates' (plural) not one specific 'tea estate' (singular). Part (c) is incorrect – it should be 'disembarks' not 'embark' since the reference is to the end of the journey. Parts (d) and (e) have punctuational error. The comma after 'train fare' should be deleted and commas inserted after 'on board' and 'fly' to make the relative clause 'who are.....fly' a parenthetical expression. Only (b) is correct. Choice (C)

Solutions for questions 12 and 13:

12. In the first blank 'character' is ruled out since one's character is inherent what one has and cannot be well-deserved (which refers to external-given by somebody). 'Reputation' is apt to be qualified by well deserved. In the second blank 'bristles with weapons' is apt. The other words, through synonymous, do not collocate with 'weapons'. Choice (D)

13. While passwords can be essential, omnipotent, ubiquotous or pervasive, in the second blank effective, valid and potent are ruled out since we expect passwords to be so, hence they cannot follow 'all too often' which suggests more frequently than expected. Choice (C)

Solutions for questions 14 to 17:

The following table gives the range of the number of students who board the bus in each route any day

Route Number	Number of students
1	24 to 30
2	28 to 35
3	32 to 40
4	26 to 32
5	20 to 24

Note: The expected number of students for routes 4 and 5 will be a fraction at 80%. As the least expected occupancy is 80% the expected number of students in these routes will be the least integer above the number at 80%

From condition (ii), (iv) and (v) and the above table, we can derive the following, which gives all the possible routes that each bus operate in

Bus	Routes it can operate in
Volvo	3
Star Bus	1, 2, 3, 4
Mazda	1, 2, 3, 4, 5
Leyland	2, 3
Ruby Bus	1, 2, 3, 4
Eicher	1, 5

14. We can see from the first table that 32 students cannot possibly board in routes 1 and 5. Hence, 32 students in Mazda, means that Mazda is operating in route 2, 3 or 4, but not 1 or 5.
$\therefore$ Eicher should be assigned to route 5. Also, since no bus was sent for servicing, Volvo must run on route 3. Hence no other bus can run on route 3. Therefore, Leyland can run only on route 2, and thus Mazda must run on route 4.
Choice (B)

15. 25 students are possible only on route 1. Hence, Eicher must be running on route 1.
As only Eicher and Mazda operate on route no.5, if Eicher operates on route no.1, Mazda should operate on route no.5 and it can't be sent for servicing. Hence, (C) is definitely false. Choice (C)

16. If Leyland was sent for servicing, then the buses and the possible routes assigned will be as follows.

Model	Route number
Volvo	3
Star bus	1/2/4
Mazda	1/2/4/5
Ruby Bus	1/2/4
Eicher	1/5

The maximum possible difference in the number of students in Star bus and Eicher will be when Star Bus runs on route 2 with 35 students and Eicher on route 5, with just 20 students. Hence the difference can be at most 35 – 20 = 15. Choice (D)

17. If Mazda carries 36 students, then Mazda must be assigned to route 3. $\Rightarrow$ Volvo is sent for servicing.
In the above case, the routes assigned to different buses, will be as follows.
Accordingly, the possible range of the number of students that could be carried is also given.

Bus Model	Route numbers	Number of Students
Star bus	1/4	24 – 32
Mazda	3	36
Leyland	2	28 – 35
Ruby bus	1/4	24 – 32
Eicher	5	20 – 24

Observing the choices and using the table above, choices A, B and D are eliminated Choice (C)

Solutions for questions 18 and 19:

Let the seven friends be represented as PC, HS, S, MB, SP, NU and GL (in the order mentioned in the question).
From the given conditions
(i) and (vi) $\Rightarrow$ HS – PC
(ii) $\Rightarrow$ GL $\leftarrow$ HS
(iii) $\Rightarrow$ MB $\leftarrow$ S
(iv) $\Rightarrow$ NU in 2nd position from left
(v) $\Rightarrow$ S in 5th or 6th position from left.
Consider the following cases

Case(i)
S in 5th position from left.

___	NU	___	___	S	___	___
1	2	3	4	5	6	7

In the above arrangement, HS and PC have to occupy positions 4 and 6 respectively.

___	NU	___	HS	S	PS	___
1	2	3	4	5	6	7

From (ii) & (iii), positions 1 and 3 have to be occupied by GL and MB in any order ⇒ SP must occupy 7th position.
∴ There are two possible arrangements in this case as shown below.

(1)	GL	NU	MB	HS	S	PC	SP
	1	2	3	4	5	6	7

(2)	MB	NU	GL	HS	S	PC	SP

Case (ii)
S is in the 6th position.
In this case, there are two further sub-cases possible.
(a) HS and PC occupy 3rd and 5th positions respectively from left.
(b) HS and PC occupy 5th and 7th positions respectively from left.
Under (a) the arrangement would be as follows.

(3)	GL	NU	HS	MB	PC	S	SP
	1	2	3	4	5	6	7

under (b) the arrangement would be as follows.

___	NU	___	___	HS	S	PC
1	2	3	4	5	6	7

Positions 1, 3, 4 can be occupied by MB, GL, SP in any order which gives a total of six possible arrangements.

(4)	MB	NU	GL	SP	HS	S	PC
	1	2	3	4	5	6	7
(5)	MB	NU	SP	GL	HS	S	PC
	1	2	3	4	5	6	7
(6)	SP	NU	MB	GL	HS	S	PC
	1	2	3	4	5	6	7
(7)	SP	NU	GL	MB	HS	S	PC
	1	2	3	4	5	6	7
(8)	GL	NU	SP	MB	HS	S	PC
	1	2	3	4	5	6	7
(9)	GL	NU	MB	SP	HS	S	PC
	1	2	3	4	5	6	7

18. Option (A) is incorrect as shown in case (8).
Option (B) is correct.
Option (C) is incorrect as shown in case (2).
Option (D) is incorrect as shown in cases (7) and (8).
Choice (B)

19. A total of 9 distinct arrangements are possible.
Choice (C)

Solutions for questions 20 to 22:

The ranks assigned are 1, 2, 3, 4, 5
From (i), sums of ranks of two combinations are equal.
The possibilities are 5 + 1 = 4 + 2 …….. (a)
3 + 2 = 4 + 1 …….. (b)
4 + 3 = 5 + 2 …… (c)
In (i), it is given that
Koman + Krennica = Goshobo + Frapin
From (iii), it can be inferred that Royal Mint does not have the lowest rank, i.e., 5.
(b) can be ruled out.
From (ii), Goshobo's rank cannot be 5 and Koman's rank cannot be 1.
From (iii) Koman's rank cannot be 5 and is higher than Goshobo's rank and hence Goshobo's rank cannot be 1.
∴ (a) can be ruled out.
∴ The only possibility is 4 + 3 = 5 + 2.
where Goshobo's and Frapin's ranks are 3 or 4, Koman's rank is 2, and Krennica's rank is 5.

20. ∴ Royal Mint's rank is 1. Choice (D)

21. If Frapin's turnover is lower than Goshobo's, Frapin's rank must be 4 and Goshobo's rank 3.
In option A, Royal Mint + Koman = 1 + 2 = 3
In option B, Goshobo + Krennina = 3 + 5 = 8
In option C, Krennica + Frapin = 5 + 4 = 9
In option D, Frapin + Koman = 4 + 2 = 6
∴ Only in option (C) is the sum a perfect square.
Choice (C)

22. Sum of Goshobo's and Koman's ranks = 3 + 2 = 5 which is Krennica's rank. Choice (B)

Solutions for questions 23 and 24:

23. Sentence (C) is incorrect - it should be 'dig up' meaning to break the ground into small pieces before planting, building etc. Choice (C)

24. Sentences (B) is incorrect - it should be 'humans'. '.....with a human face' in (A) refers to 'consider the needs of the ordinary people'. In (D) 'the human face' refers to a person who makes it easier for ordinary people to understand.
Choice (B)

Solutions for questions 25 and 26:

25. The penultimate sentence says 'it sounds like' which means it is not so in reality. Hence in reality Africans are not party poopers; which means contrary to the statistics they do consume a lot of beer which is brought out by (B). (C) can came after (B) not in place of it. Choice (B)

26. The para presents a contrast between Inditex and other fashion firms. While the latter source from China which is cheap but has a long supply chain, Inditex sources from Spain, Portugal and Moroco which though costly makes for a short supply chain, enabling it to respond quickly to changes in fashion. The concluding sentence presents the consequence of this which is (A). (B) describes other firms while the focus is on Inditex. (C) and (D) have a negative tone which is contradictory to the positive tone of the para.
Choice (A)

Solutions for questions 27 to 30:

Number of words and Explanatory notes for RC:

Number of words : 563

27. The passage tries to explain why the poor behave the way they do, hence choice (A) is apt. Choices (B), (C) and (D) are not the focus, though they have been mentioned.
Choice (A)

28. Choice (A) can be inferred "other things ….. more important than food …." (para 2, sentence 2). Choice (B) can be inferred ".... Spend lavishly ….. skimp on food ….". Choice (D) can be understood from the first sentence and the last two sentences of the first para. Choice (C) is negated by the same sentence. Choice (C)

29. Orwell argued that the poor cope with adversity by reducing their standards (of living). The author says that the poor spend on luxuries and enjoy life, even if they have to struggle for bare necessities. This view is stated in choice (A). Choice (B) is incorrect as they don't choose 'to defy fate'. Choice (C) is incorrect. Choice (D), while laudable, is not stated in the passage. Choice (A)

30. The said workers enjoyed tasty food without bothering about its nutritional value, as stated in para 1. The cause and effect in choice (A) does not concern these workers. Nor are they bothered about health costs, as given in choice (D). Choice (B) is not true, as the workers fed themselves liberally. Choice (C)

Difficulty level wise summary - Section II	
Level of Difficulty	Questions
Very Easy	–
Easy	–
Medium	2, 3, 4, 6, 12, 13, 18, 19, 20, 21, 22, 24, 26, 28
Difficult	1, 5, 7, 8, 9, 1014, 15, 16, 17, 23, 25, 27, 29, 30
Very Difficult	11