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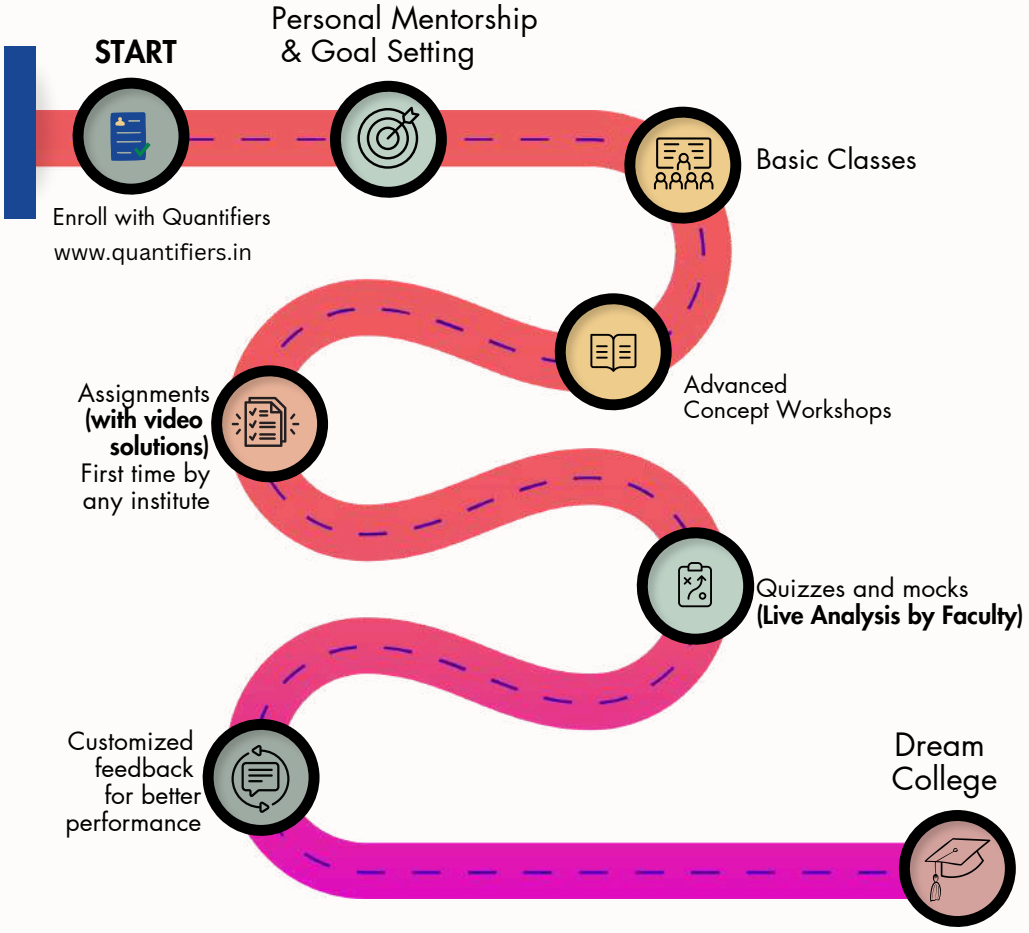

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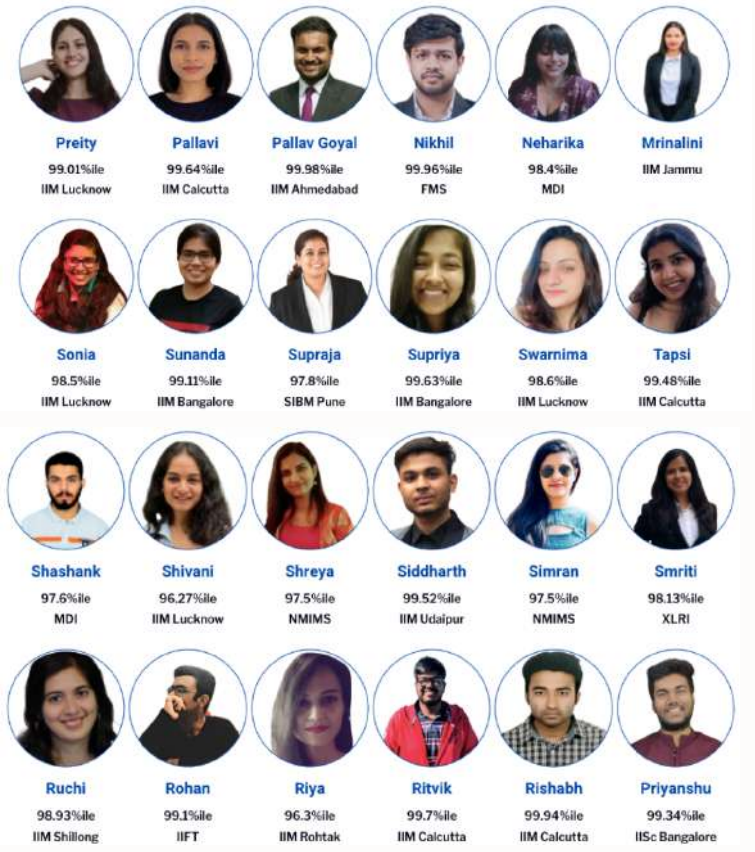


CAT 2012 VARC (Memory Based Paper)

Directions (Q. Nos. 1-2) Each of the following questions has a paragraph from which a sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way

Question 1.

RD Laing developed a broad range of thought on interpersonal psychology. This deals with interactions between people, which he considered important, for an ethical action always occurs between one person and another. In books such as The Politics of Experience, he deals with issues concerning how we should relate to persons labelled by the psychiatric establishment as "schizophrenic".

A. He came to be seen as a champion for the rights of those considered mentally ill
B. He spoke out against (and wrote about) practices of psychiatrists which he considered inhumane or barbaric, such as electric shock treatment
C. Laing also did work in establishing true asylums as places of refuge for those who feel disturbed and want a safe place to go through whatever it is they want to explore in themselves and with others
D. He suggested that the effects of psychiatric drugs (some of which are very deleterious, such as tardive dyskinesia) be called just that: "effects" and not be referred to by the preferred euphemisms of the drug companies, who prefer to call them

Question 2.

Jurisprudence is the theory and philosophy of law. Students of jurisprudence aim to understand the fundamental nature of law and to analyse its purpose, structure and application. Jurisprudential scholars (sometimes confusingly referred to as 'jurists) hope to obtain a deeper understanding of the law, the kind of power that it exercises and its role in human societies. They seek a deeper understanding behind laws seemingly unpredictable and uncertain nature.

A. At a practical level, some jurists hope to improve society by studying what the law is, what it ought to be, and how it actually operates
B. A common starting point in understanding jurisprudence is the objective of law to achieve justice
C. Hence, the arguable scientific nature of jurisprudence
D. Jurisprudence seeks to draw on unrestricted elements of life

Directions (Q. Nos. 3-5) Read the following passage carefully and answer the questions based on that.

Human reason, in one sphere of its cognition, is called upon to consider questions, which it cannot decline, as they are presented by its own nature but which it cannot answer, as they transcend every faculty of the mind.

It falls into this difficulty without any fault of its own. It begins with principles which cannot be dispensed within the field of experience and the truth and sufficiency of which are, at the same time insured by experience. With these principles it rises, in obedience to the laws of its own nature, to ever higher and more remote conditions. But it quickly discovers that in this way, its labours must remain ever incomplete because new questions never cease to

present themselves and thus it finds itself compelled to have recourse to principles which transcend the region of experience while they are regarded by common sense without distrust. It thus falls into confusion and contradictions from which it conjectures the presence of latent errors, which however, it is unable to discover because the principles it employs transcending the limits of experience cannot be tested by that criterion. The arena of these endless contests is called Metaphysic.
Time, when she was the queen of all the sciences and if we take the will for the deed, she certainly deserves, so far as regards the high importance of her object-matter, this title of honor.

Question 3.
According to the author, 'Metaphysic' is best defined when human
A) Becomes conscious of presence of latent errors
B) Solves pending old questions, tackles new ones that arise
C) Employs principles that transcend the limits of experience
D) Rises to higher and more remote conditions

Question 4.
If there were a paragraph succeeding the last, it would probably be about
A) The rise of Metaphysics Into the realm of popular acclaim
B) Metaphysics as the final solution to human misery
C) The modern day contempt for metaphysical reasoning
D) The subjugation of science by a transcendental human consciousness

Question 5.
The passage provides an answer to which of the following?
A. How does experience limit the human mind's recourse to principles in combating new questions that present themselves?
B. Why does human reason restrain its forays to within its known limitations?
C. How does the human reason mind attempt to resolve problems beyond its scope?
D. None of the above

Directions (Q. Nos. 6-10) Find the incorrect usage of the word in the following questions
Question 6.
SLAM
A. I heard the door slam behind him
B. She slammed down the phone angrily
C. She slammed his face hard
D. The car skidded and slammed into a tree

Question 7.
STOP
A. The car stopped at the traffic light
B. Shantaram Immediately stopped what he was doing
C. We need more laws to stop pollution
D. He is stopped by law from holding a licence

Question 8.
TIME
A. I can remember very few times when we had to cancel due to ill health
B. This is the first time that I have been to London
C. The train arrived right on time
D. The changing seasons mark the passing of time

Question 9.
SOMBER
A. He was dressed in somber shades of shades of grey and black
B. Paul was in a somber mood
C. The year ended on a somber note
D. He is in the somber position of not having to worry about

Question 10.
CALL
A. She payed him a call from the payphone near her home
B. I will call you tomorrow evening at 7 pm
C. Vikram decided to call a meeting to discuss the trade fair
D. She felt the call of religion early in her life

Directions (Q. Nos. 11-17) Read the following passage carefully and answer the questions that follow.
It is essential to rid ourselves of the false impression of time, which our human limitations seem to impose upon us. Above all, we must rid ourselves of the belief that the future is in some way less determined than the past, if the borderline between past and future is illusory, then so must be the distinction between the two regions of time which it is supposed to separate. The only reason we believe the future to be still undecided while the past is immutable is that we can remember the one and not the other. To avoid these prejudices we must picture the history of the universe not as a three dimensional stage on which things change but as a static four- dimensional space time structure of which we are a part. We believe that events are not real until they "happen", whereas in reality past, present and future are all frozen in the four dimensions of space time. Unfortunately even if all this is accepted, we have to continue using the language of a "moving" time, for we have no other but we must try to interpret this language always as a description of the unchanging space time structure of the universe. Contemplating the history of the universe in this way, it is attractive to believe that the periods of expansion and contraction could be related to each other by symmetry. Both points of view merit serious consideration and that we cannot say with any certainty that the contracting universe will or will not, differ fundamentally from the expanding phase that we observe today.

Question 11.
According to the author of the passage,
A. The time value 'now' is most essential to the understanding of the universe
B. The impression of a moving time is not a false imposition of human limitation

C. There is nothing with respect to which time could move
D. The future is better determined than the past

Question 12.
Which of the following best exemplifies the author's attitude to time?
A. The Impression of moving time is false
B. 'Now' is a purely subjective phenomenon existing only within the human mind
C. The future is not in any way less determined than the past
D. All of the above

PASSAGE 2
Amidst the increasing clamour for a discourse on educational improvement on budgetary allocations and retention rates, there is one crucial question which is insufficiently discussed. And the question is this: what is the purpose of education today? At various times, over the past 100 years that question has been answered differently- in colonial India, the official answer would have been, "to create a cadre of clerks and officials to run the colonial state", while in a newly decolonized India, the official answer could be, "to create a nationalist sensibility and the national citizen."
Today, I suspect the official answer to the question about the purpose of education would be, "to give people jobs." Increasingly, the emphasis in education is towards vocationalisation and skills development. In a recent private conversation, the Education Minister of North Indian State said, "We have a lot of jobs. We just don't have the people skilled enough to do them. We need bio-technologists, fitters, crane operators, nurses and lab assistants. But our education does not prepare young people for what we need. We need to change that."
Similarly, we find that the Confederation of Indian Industry is showing increasing interest in school education. The CII recently commissioned a study to look at the challenges and opportunities which face the Indian industry and this is its thesis that in the year 2025, there will be about 40 million jobs worldwide, which need to be filled. India will be one of the few countries in the world to have a labour surplus of the right age group. It, therefore believes that we need to think about the kinds of educations system necessary to develop skills whereby our children will not be best equipped to function in this scenario.
Public consensus on the way to improve educational access is increasing moving towards a public-private partnership. But we must be concerned about the terrible narrowness of the vision for educational improvement which characterizes our discourse.
Education, in this picture, is about the implanting useful skills – the assumption being that it will ultimately lead to both personal and national enrichment but as Martha Nussbaum writes, education is not simply a producer of wealth; it is a producer of citizens. Citizens in a democracy need, above all, freedom of mind to learn to ask searching questions; to reject shoddy historical argument: to imagine alternative possibilities from a globalizing, service and market-driven economy, to think what it might be like to be in others' shoes. Recently, the Israeli novelist, Amos Oz, spoke about the importance of reading novels as what he calls an antidote to hate. He said, "I believe in literature as a bridge between people. I believe curiosity can be a moral quality. I believe imagining the other can be an antidote to fanaticism. Imagining the other will make you not only a better businessperson or a better lover but even a better person. Part of the tragedy between Jew and Arab is the inability of so many of us, Jews and Arabs, to imagine each other-really imagine each other; the loves,

the terrible fears, the anger, the passion. There is too much hostility between us, too little curiosity."
The skills and thought processes which engender the curiosity, the imagining are associated with the humanities, the arts and literature and despite the splendid interventions in the NCERTs new textbooks for History and Political Science, these areas are terribly neglected. Our dominant conception of worthwhile education is increasingly technical and mechanistic. The thinking processes engendered by the social sciences are today seen as quaint, vaguely lefty-intellectual, a kind of quixotic idealism – which has very little to do with the real business of life. It is a strange irony that in the educational world of Gandhi, Tagore and Aurobindo, there are tragically few voices which assert a more holistic vision.

Question 13.
The true purpose of education in India as inferred from the passage
A. Is to increase a nationalist sensibility in every citizen
B. Has been a topic of debate since independence
C. Is a concept that has been changing from time to time
D. Is to teach an individual the necessary skills to earn his livelihood

Question 14.
In the author's perception, our vision for educational improvement is narrow because our system
A. Gives importance only to vocationalisation and skills development
B. Believes in making people earn more so that they can stand up to the challenges of a globalizing economy
C. Does not acknowledge the importance of humanist concepts
D. Does not support a public-private partnership in Improving educational access to everyone

Question 15.
Amos Oz believes that the world will become a peaceful place, if people
A. Become less hostile
B. Become less narrow minded
C. Become less fanatic
D. Empathise with each other

Question 16.
The Indian concept of worthwhile education is that which
I. Gives technical training
II. Makes people think
III. Has a measurable outcome
IV. Kindles our curiosity and imagination
V. Helps people become wealthy

A. I and V
B. II and III
C. I, II, IV

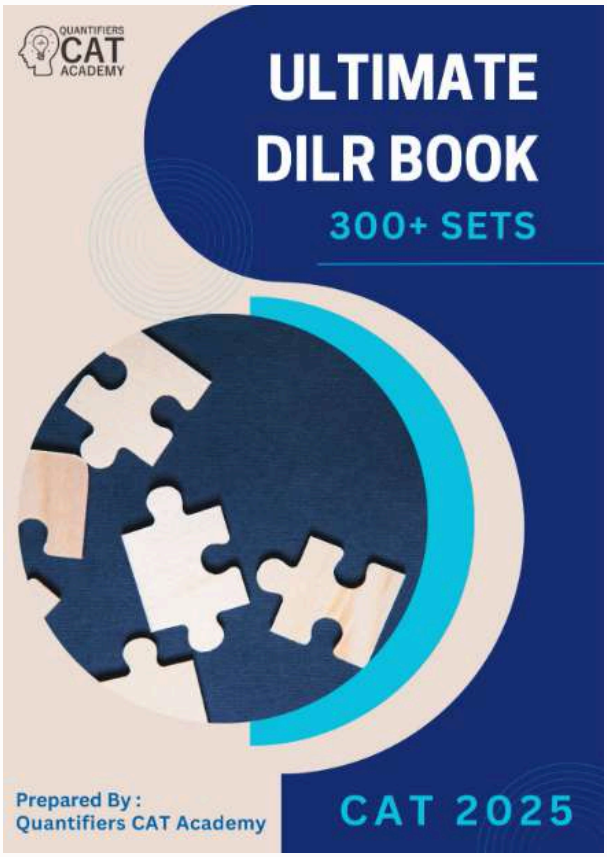
D. I, III, IV

Question 17.
Which of the following is not an attribute of a good citizen in a democracy?
A. Learning to ask searching
B. Not accepting inadequate reasons from history
C. Thinking out of the box
D. Learning to negotiate with people

Directions (Q. Nos. 18-19) Each question gives a sentence with a part of the sentence underlined that may contain an error. Four alternative substitutes are given for the underlined portion. Identify the choice that replaces the underlined part to form a logically and grammatically correct statement and mark its number as your answer

Question 18.
Feminism is not simply a movement to ensure that women will have equal rights with men but that a commitment for eradicating the ideology of domination that permeates Indian culture at various levels
A. That is a commitment to eradicate the ideology to dominate that
B. It is a commitment to eradicating the ideology of domination that
C. Whose commitment to eradicating the ideology of domination which
D. But that a commitment for eradicating the ideology of domination that

Question 19.
It is unfortunate that the lure of visiting foreign countries still draws a very large number of our people, who do not seem to be realizing what their own country is and how much can be seen and learnt it?
A. Who do not seem to realize their country and see and learn from it
B. Who are not realizing what their own country is and how much there is in it to see and learn from
C. Who do not seem to realize what their own country is and how much there is in it to see and learn from it
D. Who do not seem to realize what their own country is and how much there is in it to see and learn from



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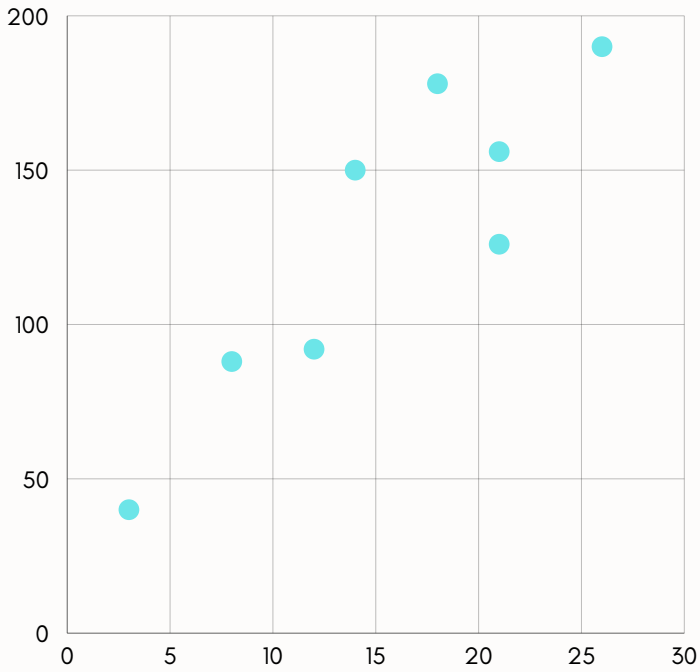

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CAT 2012 DILR

A cricket tournament had three teams- India, Australia and Sri Lanka taking part in it. The format of the tournament was such that in the preliminary stage each of these teams, would play the other teams four times. Four points are awarded for a win and in case a team beats another team by a huge margin, it is given a bonus point In addition to the four points. At the end of the preliminary stage, the top two teams, in terms of the points scored, reaches the finals. No match in the tournament ends in a tie and if two teams end up with the same number of points at the end of preliminary stage, the team with the better net run rate is placed higher.

Question 1.
If India reached the finals, then what is the minimum number of points it x would have scored in the preliminary stage?
A 8
B 10
C 12
D 16

Question 2.
If Sri Lanka was eliminated in the preliminary stage, then what is the maximum number of points it could have scored?
A 12
B 14
C 16
D 20

Question 3.
If Australia had the highest number of points at the end of the preliminary stage, then at least how many points did it have?
A 16
B 17
C 18
D 20

Directions (Q. Nos. 4-6) Read the following information carefully and answer the questions based on that.
Each of five people- A, B, C,D and E owns a different ear among Maruti, Mercedes, Sierra, Fiat and Audi and the colours of these cars are Black, Green, Blue, White and Red, not necessarily in that order. No two cars are of the same colour. It is also known that

i. A's car is not Black and it is not a Mercedes.
ii. B's car is Green and it is not a Sierra
iii. C's car is a Mercedes and it is not Blue.
iv. D's car is not Red and it is a Fiat.
v. E's car is not White and it is not an Audi

Question 4.
If A owns a Blue Sierra, then E's car can be a
A. Red Maruti
B. White Maruti
C. Black Audi
D. Red Audi

Question 5.
If A owns a White Audi, then E's car can be a
A. Red Maruti
B. Blue Maruti
C. Green Audi
D. Black Sierra

Question 6.
If A's car is a Red Maruti and D's car is White, then E owns a
A. Black Audi
B. Blue Sierra
C. Black Sierra
D. D Blue Audi

Directions (Q. Nos. 7-10) Read the following information carefully and answer the questions based on that.
Two families are planning go on a canoe trip together. The families consist of the following people: Robert and Mary Henderson and Their three sons Tommy, Don and William, Jerome and Ellen Penick and their two daughters Kate and Susan. There will be three canoes with three people in each canoe. At least one of the four parents must be in each canoe. At least one person from each family must be in each canoe.

Question 7.
If the two mothers ride together in the same canoe and the three brothers each ride in a different canoe, which of the following must be true?
A. Each canoe has both males and females in it
B. One of the canoes has only females in it
C. One of the canoes has only males in it
D. The sisters ride in the same caneo

Question 8.
If Ellen and Susan are together in one of the canoes, which of the following could be a list of the people together in another canoe?
A. Dan, Jerome, Kate
B. Dan, Jerome, William
C. Dan, Kate, Tommy
D. Jerome, Kate, Mary

Question 9.
If Jerome and Mary are together in one of the canoes, each of the following could be a list of the people together in another canoe except
A. Dan, Ellen, Susan
B. Ellen, Robert, Tommy
C. Ellen, Susan, William
D. Ellen, Tommy, William

Question 10.
If each of the Henderson children rides in a different canoe, which of the following must be true?
I. The Penick children do not ride together

II. The Penick parents do not ride together

III. The Henderson parents do not ride together

A. Only I
B. Only II
C. I and II
D. I and III

Directions (Q. Nos. 11-14) Read the following information carefully and answer the questions based on that.
Two teams of five each must be selected from a group of ten persons-A through J-of which A, E and G are doctors; D, H and J are lawyers; B and I are engineers; C and F are managers. It is also known that
(i) Every team must contain persons of each of the four professions.
(ii) C and H cannot be selected together.
(iii) I cannot be selected into a team with two lawyers.
(iv) J cannot be in a team with two doctors.
(v) A and D cannot be selected together.

Question 11.
If C and G are in different teams, then who are the other team members of A?
(a) C, D, E and I
(b) B, F, I and J
(c) B, C. H and J
(d) F, H, I and G

Question 12.
Who among the following cannot be in the same team as I?
(a) H
(b) J
(c) C

(d) F

Question 13.
Who among the following must always be in the same team as A?
(a) D
(b) B
(c) C
(d) F

Question 14.
If F and G are in the same team, which among the following statements is true?
(a) Band H will in the other team
(b) E and I must be in the same
(c) H must be in the same team but B must in the other
(d) C must be in the other team but D must be in the same team

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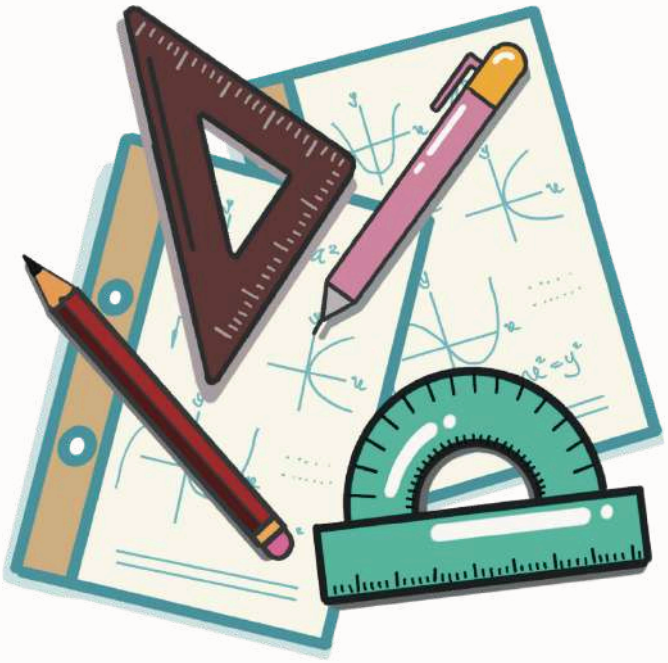

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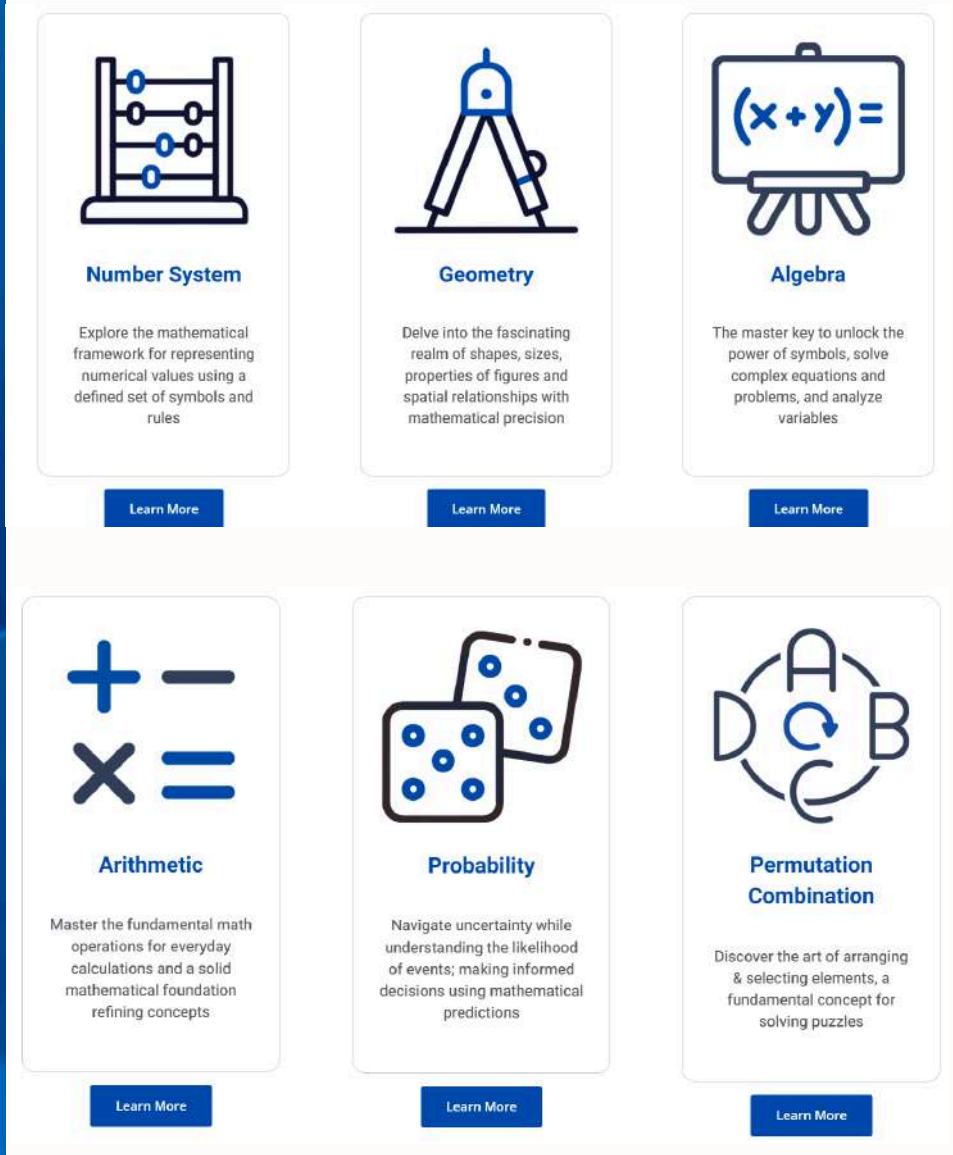

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CAT 2012 QUANT.

Question 1
Consider a sequence S whose nth term T_n is defined as 1 + 3/n, where n= 1, 2,… Find the product of all the consecutive term of S starting from the 4^{th} term to the 60^{th} term.
A. 1980.55
B. 1985.55
C. 1990.55
D. 1975.55

Question 2.
Let P= {2,3,4,…100) and Q={ 101,102,103…200). How many elements of Q are there such that they do not have any element of P as a factor?
A. 20
B. 24
C. 23
D. 21

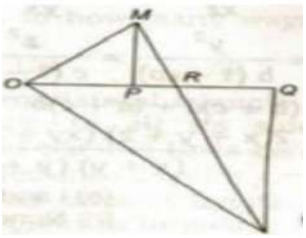
Question 3.
What is the sum of all the 2-digit number which leave a remainder of 6 when divided by 8?
A. 986
B. 594
C. 262
D. None of these

Question 4.
Which of the term 2⅓, 3¼, 4⅙, 6⅛and 101/12s the largest?
A. 2⅓
B. 3¼
C. 4⅙
D. $10^{1/12}$

Question 5.
If the roots of the equation $(a^2 + b^2)\ x^2 + 2(b^2+c^2)x + (b^2 + c^2) = 0$ are real, which of the following must hold true?
A. $c^2 \geq a^2$
B. $c^4 \geq a^2\ (b^2 + c^2)$
C. $b^2 \geq a^2$
D. $a^4 \leq b^2\ (a^2 + c^2)$

Question 6.
Find the remainder of 2^{1040} divided by 131
A. 1
B. 3
C. 5
D. 7

Question 7.
In the figure below, <MON = ∠MPO= <NQO= 90 and OQ is the bisector of <MON and QN=10, OR 40/7. Find OP.



A. 4.8
B. 4.5
C. 4
D. 5

Question 8.
If $(a^2 + b^2)$, $(b^2 + c^2)$ and $(a^2 + c^2)$ are in geometric progression, which of the following holds true?
A. $b^2 – c^2 = (a^4 – c^4) / (b^2 + a^2)$
B. $b^2 – a^2 = (a^4 – c^4) / (b^2 + c^2)$
C. $b^2 – c^2 = (b^4 – a^4) / (b^2 + a^2)$
D. $b^2 – a^2 = (b^4 – c^4) / (b^2 + a^2)$

Question 9.
P is a prime and m is a positive integer. How many solution exist for the equation $P^6 – P = (m^2 + m + 6) (P-1)$?
A. 0
B. 1
C. 2
D. infinite

Question 10.
A certain number written in a certain base is 144. Which of the following is always true?
I.Square root of the number written in the same base is 12.
II. If base is increased by 2, the number becomes 100.
A. Only I
B. Only II
C. Both I and II
D. Neither I nor II

Question 11.
A rectangle is drawn such that none of its sides has length greater than ‘a’. All lengths less than ‘a’ are equally likely. The chance that the rectangle has its diagonal greater than ‘a’ is (in term of %)
A. 29.3%

B. 21.5%
C. 66.65%
D. 33.33%

Question 12.
If x is a real number, [x] is greater integer less than or equal to x, then 3|x|+2-[x] = 0. Will the above equation have any real root?
A. Yes
B. No
C. Will have real roots for x<0
D. Will have real roots for x>0

Question 13.

If $a = \frac{x}{y+z}, b = \frac{y}{z+y}, c = \frac{z}{x+y}$, then which of the following statements is/are true?

I. $\frac{b+c-1}{yz} + \frac{a+c-1}{xz} + \frac{a+b-1}{yx} = 1$

II. $\frac{x^2}{a(1-bc)} = \frac{y^2}{b(1-ca)} = \frac{z^2}{c(1-ab)}$

III. $(a+b)c + (b+c)a + (a+c)b = \frac{2(x+y+z)(xy+xz+yz) - 6xyz}{(x+y)(y+z)(z+x)}$

A. I and II
B. I and III
C. II and III
D. None of these

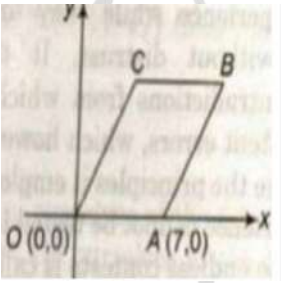
Question 14.
If α and ß are the roots of the quadratic equation $x^2 - 10x + 15=0$, then find the quadratic equation whose roots are $(\alpha + \alpha/\beta)$ and $(\beta + \beta/\alpha)$
A. $15x^2 + 71x + 210=0$
B. $5x^2-22x + 56=0$
C. $3x^2-44x +78 =0$
D. Cannot be determined

Question 15.
A vessel has a milk solution in which milk and water are in the ration 4:1. By addition of water to it, milk solution with milk and water in the ratio 4:3 was formed. On replacing 14 L of this solution with pure milk the ratio of milk and water changed to 5:3. What is the volume of the water added?
A. 12 L
B. 60 L
C. 32 L
D. 24 L

Question 16.
A car A starts from a point P towards another point Q. Another car B starts (also from P) 1 h after the first car and overtakes it after covering 30% of the distance PQ. After that, the cars continue. On reaching Q, car B reverses and meets car A, after covering 23½ of the distance QP. X Find the time taken by car B to cover the distance PQ (in hours).
A. 5
B. 3
C. 8
D. 10/3

Question 17.
A, B and C can independently do a work in 15 days, 20 days and 30 days respectively. They work together for some time after which C leaves. A total of Rs. 18000 is paid for the work and B gets Rs. 6000 more than C. For how many days did A work?
A. 2
B. 4
C. 6
D. 8

Question 18.
In the figure given, OABC is parallelogram. The area of the parallelogram is 21 sq units and points C lies on the line x=3. Find the coordinates of B.



A. (3,100)
B. (10,3)
C. (10,10)
D. (8,3)

Question 19.
Find the complete set of values that satisfy the relations $||x|-3| < 2$ and $||x-2| < 3$
A. (-5,-1) U (1,5)
B. (1,5)
C. (-5,5)
D. (-1, 1)

Question 20.
If $ax^2 + bx + c = 0$ and 2a, b and 2c are in arithmetic progression, which of the following are the roots of the equation?

A. a, c
B. -a, -c
C. -a/2, -c/2
D. -c/a, -1

Question 21.
A solid sphere of radius 12 inches is melted and cast into a right circular cone whose base diameter is √2 times its slant height. If the radius of the sphere and the cone are the same, how many such cones can be made and how much material is left out?
A. 4 and 1 cubic Inch
B. 3 and 12 cubic inches
C. 4 and 0 cubic inch
D. 3 and 6 cubic inches

Question 22.
If $\log_x (ab) \log_x(a+b) = \log_x (b/a)$, find $a^2/b^2 + b^2/a^2$
A. 4
B. 2
C. 3
D. 6

Question 23.
Letters of the word "ATTRACT" are written on cards and are kept on a table. Manish is asked to lift three cards at a time, write all possible combinations of the three letters on a piece of paper and then replace the three cards. The exercise ends when all possible combinations of letters are exhausted. Then, he is asked to strike out all words in his list, which look the same when seen in a mirror. How many words is he left with?

A. 40
B. 20
C. 30
D. None of these

Question 24.
S is a set given by S = {1,2,3,….4n), where n is a natural number. S is partitioned into n disjoint subsets A1, A2, A3,…..An, each containing four elements. It is given that in everyone of the these subsets there is one element, which is the arithmetic mean of the three elements of the subsets. Which of the following statements is then true?

A. n 1 and n≠ 2

B. n1 but can be equal to 2
C. n 2 but can be equal to 1
D. It is possible to satisfy the requirements for n =1 as well as for n=2.

Question 25.
When asked for his taxi number, the driver replied, “If you divide the number of my taxi by 2, 3, 4, 5, 6 each time you will find a remainder of one. But, if you divide it by 11, the remainder is zero. You will also not find any other driver with a taxi having a lower number who can say the same”. What is the taxi number?

A. 121
B. 1001
C. 1881
D. 781

Question 26.
A student is asked to form numbers between 3000 and 9000 with digits 2, 3, 5, 7 and 9. If no digit is to be repeated, in how many ways can the student do so?

A. 24
B. 120
C. 60
D. 72

Question 27.
The side of an equilateral triangle is 10cm long. By drawing parallels to all its sides, the distance between any two parallel lines being the same. The triangle is divided into smaller equilateral triangle, each of which has sides of length 1 cm. How many such triangles are formed?
A. 60
B. 90
C. 120
D. None of these

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Solutions:
VARC

1. Correct Answer: A
A person suffering from a mental disorder (schizophrenia) is called a schizophrenic.
Out of all the options, Option A seems to be the most logical conclusion of the paragraph as it carries forward the idea of RD Laing standing up for the mentally ill. Option B is also close but it doesn't have a concluding tone.

2 . Correct Answer: A
Option A is the most logical conclusion as it sums up what has been talked about in the paragraph.

3 .Correct Answer: B
Refer to the 4th line in the 2nd paragraph - "..because new questions never cease to present themselves..." and the last line - "The arena of these endless contests is called Metaphysic". Both of these indicate that Option B is the best answer. The "endless contests" refers to what is mentioned in option B.

4. Correct Answer: C

5. Correct Answer: C
Refer to the starting, ending part of the 2nd para and the explanation for Q3. Both of them point to option C.

6. Correct Answer: C
C will then be incorrect. She slapped is correct. If you slam, you slam it against something.

7. Correct Answer : D
There's a rule of not using redundant nouns after 'by'
Law's job is to stop someone from doing something. So, sentence D should be "The law stops him from holding a license"

8.Correct Answer: A
In option A, it should be - "I can remember very few instances/occasions when we had to cancel due to ill health"

9. Correct Answer: D
Somber means gloomy, dull.
Somber doesn't fit in the sentence in option D.

10. Correct Answer: A
In sentence A, it should be - "She paid him a call..."

11. Correct Answer: C
a)"now" is only a subjective term that is purely a child of human limitation.

b) "moving" time is also a farce that derives from human limitation and is only imposed as they have no alternative interpretation of time
c) time itself moves according to the 4 dimensional space time interpretation
d) there is no fine line between future present and past.

12.Correct Answer: D
a)"moving" time is a farce that derives from human limitation and is only imposed as they have no alternative interpretation of time
b) as time itself isn't stationary, terms like "now" has no sense and meaning
c) future is as determined as the past, and it's uncertainty is an illusion that appears as we are oblivious of things that haven't happened yet.
All are true

13. Correct Answer: C
In the colonial times, education served as a means of creating a cadre of officers while post independence, it engendered a feeling of nationalism among citizens(Para 1). However, the modern concept of Indian education system is to create employment (Para 2). Hence, the purpose of Indian education is ever changing.

14. Correct Answer: A
The entire focus of the education system is to make people skilled for the upcoming surplus of jobs by 2025.(Para 2&3)It solely focuses on a system where children will be better equipped for this scenario. The aim also is to move towards a public-private partnership.(Para 4)
15. Correct Answer: D Amos Oz believes that there will be less fanaticism and more peace if people can imagine what it is like to be in other's shoes.(Para 4)

16. Correct Answer: A
The Indian education system has deviated from the humanities teachings which engenders curiosity and creativity.
It has become increasingly technical and mechanistic with the sole aim of increasing employment eventually leading
to people becoming rich.(Para 5)
So, option A

17. Correct Answer: D
As the passage suggests - the education system of a democracy like India should teach the humanities subjects which invoke peoples' curiosity and drives them to think creatively and question the authenticity of historical evidence.
D is not an attribute of a good citizen in a democracy

18. Correct Answer: B
Only option B is grammatically correct to be used in place of the italicized phrase.

19. Correct Answer: D
A is a straightforward wrongly structured option. Wrong tense is used in B. In C, usage of "it" twice is wrong. Option D gets rid of this error in C, and is the correct option.

DILR

1. Correct Answer: A
Let's say Australia tops the table at the end of preliminary round.
For minimizing, India's points, maximize the points of Aus and make the points of India and Sri Lanka equal.
Aus won all its 8 matches against India and SL
India and SL won 2 matches each out of the 4 matches played b/w them
Both score 4x2 = 8 points, but India qualifies as a result of a better run rate.

2. Correct Answer: D
For maximizing SL's points and yet eliminating it, make the points of all 3 teams equal. The other 2 teams with better run rate qualify. Also, assume each match results in a team winning by a huge margin.
Total matches = 4 + 4 + 4 = 12
Total points = 12x4 + 12x1 = 60
60/3 = 20 points
So, SL max points = 20

3. Correct Answer: B
We have to minimize points of table topper.
Assume there are no bonus points results, except 1 where Australia wins.
So, like the previous question, Australia's points = 48/3 + 1 = 17 points

4. Correct Answer: A
Person Car Color
A Sierra Blue
B xSierra Green
C Merc xBlue
D Fiat xRed
E xAudi xWhite

E can't have Audi and a white car, so options B, C, D eliminated
A is the answer

5. Correct Answer: D
Person Car Colour
A Audi White
B xSierra Green
C Merc xBlue
D Fiat xRed
E xAudi xWhite

B can't have a Sierra, so E will have to have a Sierra.
So, option D

6. Correct Answer: B
Person Car Colour
A Maruti Red
B xSierra Green
C Merc xBlue
D Fiat White
E xAudi xWhite

Options A, D eliminated as E can't have an Audi
C can't have Blue coloured car, so E has a Blue Sierra

7. Correct Answer: A
R, M have 3 sons - T, D, W
J, E have 2 daughters - K, S
Let the 3 canoes be 1,2,3
M, E ride together in canoe 1. => R, J ride in canoes 2 and 3 respectively
If 1 has M,E,D
2 can have R,T,S
3 will have to have J,K,W
There are both males and females in both canoes

8. Correct Answer: B
R, M have 3 sons - T, D, W
J, E have 2 daughters - K, S
Let the 3 canoes be 1,2,3
Check through options.
Option A ->
E, S are in 1
D,J,K are in 2
Family 2 is exhausted now. So, not possible
Option B ->
E,S are in 1
D,J,W are in 2
R,M,T,K are left..
R,M,K in 3 is possible. Then T will go in 1
So, option B is possible

9. Correct Answer: B
R, M have 3 sons - T, D, W
J, E have 2 daughters - K, S
J,M are together.
Check through options.
Option A ->
D,E,S together
J,M,W and R,T,K can be together. So, Option A is possible
Option B ->
E,R,T together

J,M together. At this point, all parents are sitting and no one is left to sit in the last canoe.
So, Option B is not possible

10. Correct Answer: D
R, M have 3 sons - T, D, W
J, E have 2 daughters - K, S
Let the 3 canoes be 1,2,3
1 -> T
2 -> D
3 -> W
Statement I -> Penick children cannot ride together because then there would be no parent in that canoe. (True)
Statement III -> If Henderson parents ride together, one canoe will have all 3 from same family. (True)
Option D is correct

11. Correct Answer: D
Doctors -> A, E, G
Lawyers -> D, H, J
Engineers -> B, I
Managers -> C, F

Option A -> ACDEI => A and D can't be together XXX
Option B -> ABFIJ => Managers can't be together XXX
Option C -> ABCHJ => C,H can't be together XXX
Option D -> AFHIG => Only remaining option, has to be correct

12. Correct Answer: B
Doctors -> A, E, G
Lawyers -> D, H, J
Engineers -> B, I
Managers -> C, F
The team includes one person from each profession – Doctor, Lawyer, Engineer, and Manager. We have three doctors and three lawyers. Thus, one team would include two doctors and the other team would include two engineers.
I cannot be selected in a team with two lawyers. J cannot be in a team with two doctors.

B and I must be in different teams are there are two engineers only.

Profession	Team 1	Team 2
Doctor		
Lawyer		J
Engineer	I	B
Manager		
	(Doctor)	(Lawyer)

C and H cannot be together.
C is a manager and H is a lawyer. There are two possibilities.
C and F must be in different teams as there are two managers only.

	Case 1		Case 2	
Profession	Team 1	Team 2	Team 1	Team 2
Doctor				
Lawyer		J	H	J
Engineer	I	B	I	B
Manager	C	F	F	C
	(Doctor)	H (Lawyer)	(Doctor)	(Lawyer)

A and D cannot be selected together.

D is a lawyer. In case 1, D has to be in team 1, and in case 2, D has to be in team 2.

	Case 1		Case 2	
Profession	Team 1	Team 2	Team 1	Team 2
Doctor		A		
Lawyer	D	J	H	J
Engineer	I	B	I	B
Manager	C	F	F	C
	(Doctor)	H (Lawyer)	A (Doctor)	D (Lawyer)

In case 1, E and G must be in team 1, and in case 2, E and G can be in either of the teams.

	Case 1		Case 2 (a)		Case 2 (b)	
Profession	Team 1	Team 2	Team 1	Team 2	Team 1	Team 2
Doctor	E	A	E	G	G	E
Lawyer	D	J	H	J	H	J
Engineer	I	B	I	B	I	B
Manager	C	F	F	C	F	C
	G (Doctor)	H (Lawyer)	A (Doctor)	D (Lawyer)	A (Doctor)	D (Lawyer)

In all the cases, I and J are in the different teams. So, B is the correct option.

13. Correct Answer: C
Refer to table in previous question
H must always be in the same team as A. So, C is the correct option.

14. Correct Answer: C
Refer to table in 12th question
If F and G are in the same team, then Case 2(b) would be true. H is in the same team as F and B is in the other team.
So, C is the correct option.

QUANT

1.Correct Answer: B
T4 = 1 + 3/4 = 7/4
T5 = 1 + 3/5 = 8/5
T6 = 1 + 3/6 = 9/6
T7 = 1 + 3/7 = 10/7
T8 = 1 + 3/8 = 11/8
T58 = 1 + 3/58 = 61/58
T59 = 1 + 3/59 + 62/59
T60 = 1 + 3/60 = 63/60
On multiplying T4 to T60, numerators from last 3 terms and denominators from first 3 terms remain.
= 61x62x63/4x5x6
= 1985.55

2. Correct Answer: D
Number of prime numbers between 101 to 200 will be our answer.
i.e. 199 197 193 191 181 179 173 167 163 157 151 149 139 137 131 127 113 109 107 103 101
There will be 21 primes.

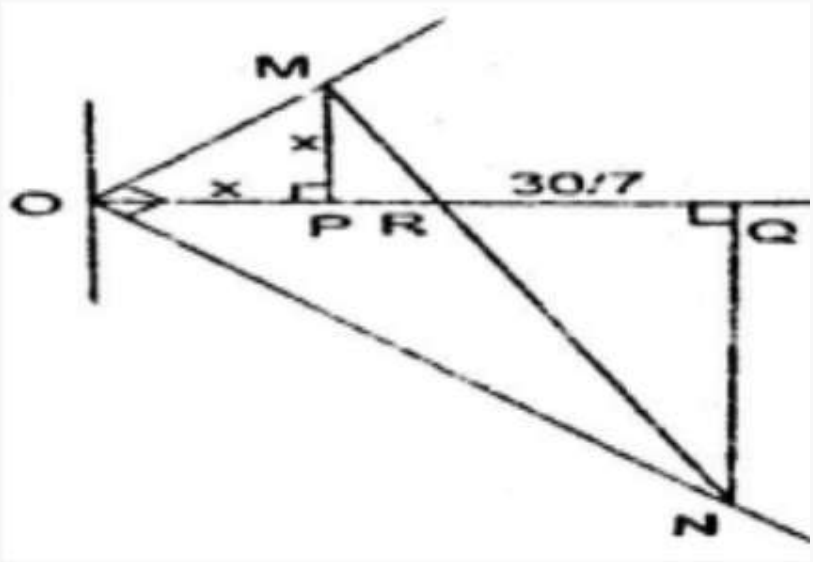
3. Correct Answer: B
14, 22, 30...94 (11 terms)
Sn = (11/2)(28 + 80) = 594

4. Correct Answer: D
Clearly, the number whose whole part is largest will be largest.
10 is the largest.

5. Correct Answer: A
The condition for a quadratic equation to have real roots is $D \geq 0$
$[2(b^2 + c^2)]^2 - 4(a^2 + b^2)(b^2 + c^2) \geq 0$
Expand this. Option A will be the result

6. Correct Answer: A
We can write this as,
2^ (4 * 260 + 0)/131, it will give same remainder as
= 2^0/131
= 1/131
So, Required Remainder = 1.

7. Correct Answer: C



Let OP=x

∴ PM=x

OR=40/7; QN=10 (OQ=10, RQ=30/7)

We have PM/PR=QN/QR

i.e. x/(40/7 - x) = 10/(30/7)

⇒ x = 4

8. Correct Answer: B
if A, B, C are in GP, then $B^2 = AC$
$\Rightarrow (b^2 + c^2)^2 = (a^2 + b^2)(a^2 + c^2)$
$\Rightarrow b^4 + c^4 + 2b^2c^2 = a^4 + a^2c^2 + b^2a^2 + b^2c^2$
$\Rightarrow b^2(b^2 + c^2) = (a^4 - c^4) + a^2(b^2 + c^2)$
$\Rightarrow b^2 - a^2 = (a^4 - c^4)/ (b^2 + c^2)$

9. Correct Answer: B
Shortcut: Let P = 2
$P^6 - P = (m^2 + m + 6)(P-1)$ becomes $64 - 2 = m^2 + m + 6$
$\Rightarrow m^2 + m - 56 = 0$
$\Rightarrow (m+8)(m-7) = 0$
m = -8, 7
m is +ve for only one value.
So, only 1 solution exists

10 . Correct Answer: C
Consider any base x.
Number (144) is represented as
$x^2 + 4x + 4$.
Taking square root we get,

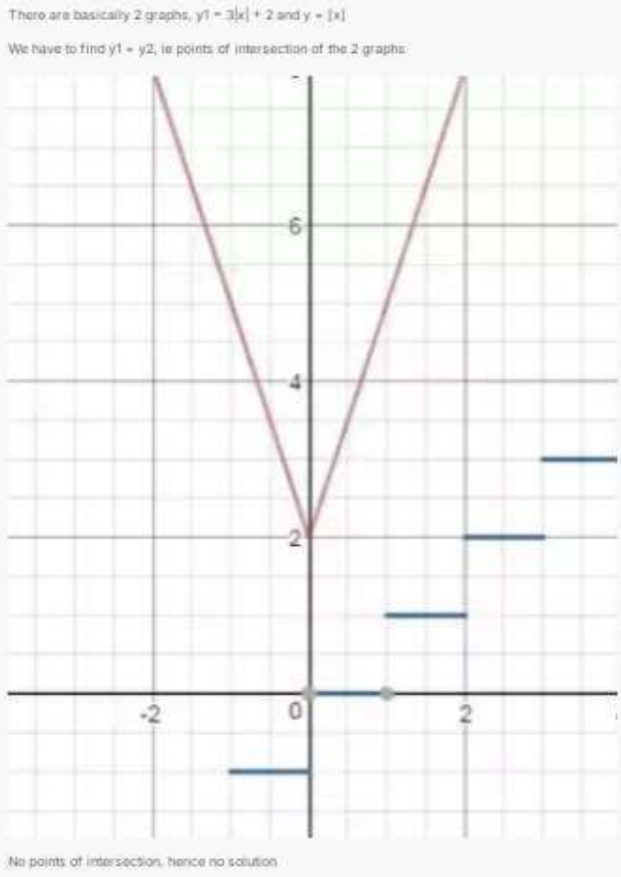
x+2 which represents the number (12).
Hence, in any base square root will always be 12.

The number (144) is represented as x^2+4x+4 in base x.
In base (x+2), the same number will be represented as 100.
Proof:
$1*(x+2)^2 + 0*(x+2)+ 0*1$
$= x^2+4x+4$.
= Same as 144 in base x.

Both I and II are always true

11. Correct Answer: B
Draw a square of side a.
Using the side as radius and a corner as the centre, draw a quadrant within the square.
The area of the square not covered by the quadrant is the required area.
$(a^2 - \pi a^2/4)/a^2 = (4-\pi)/4$
$\% = 25(4-\pi) = 21.5\%$

12. Correct Answer: B



13. Correct Answer: C
Shortcut: Take x = 1, y = 2, z = 3
Find values of a, b, c and substitute these values in the options
II and III are true

14. Correct Answer: C
$\alpha + \beta = 10$
$\alpha\beta = 15$
Sum of roots of required equation = $\alpha + \beta + [\{(\alpha+\beta)^2 - 2\alpha\beta\}/\alpha\beta] = 10 + (100 - 30)/15 = 44/3$
Product of roots of required equation = $\alpha\beta + \beta + \alpha + 1 = 26$
Quadratic equation whose sum and product of roots are known is x^2 - (Sum of roots)x + P = 0
$\Rightarrow x^2 - 44x/3 + 26 = 0$
$\Rightarrow 3x^2 - 44x + 78 = 0$

15. Correct Answer: C
Let the milk solution be of 5x L, 4x Milk, x water
y L water is added.
$4x/(x+y) = 4/3$
$\Rightarrow y = 2x$
Now solution has become 5x + 2x = 7x (Milk water ratio is 4:3)
14 L solution is replaced with 14 L milk. Replaced solution has Milk, water in ratio 4:3 ie, 8 L milk and 6 L water
New combination after replacement => $(4x - 8 + 14)/(3x - 6) = 5/3$
$\Rightarrow x = 16$
So, y = 32 L

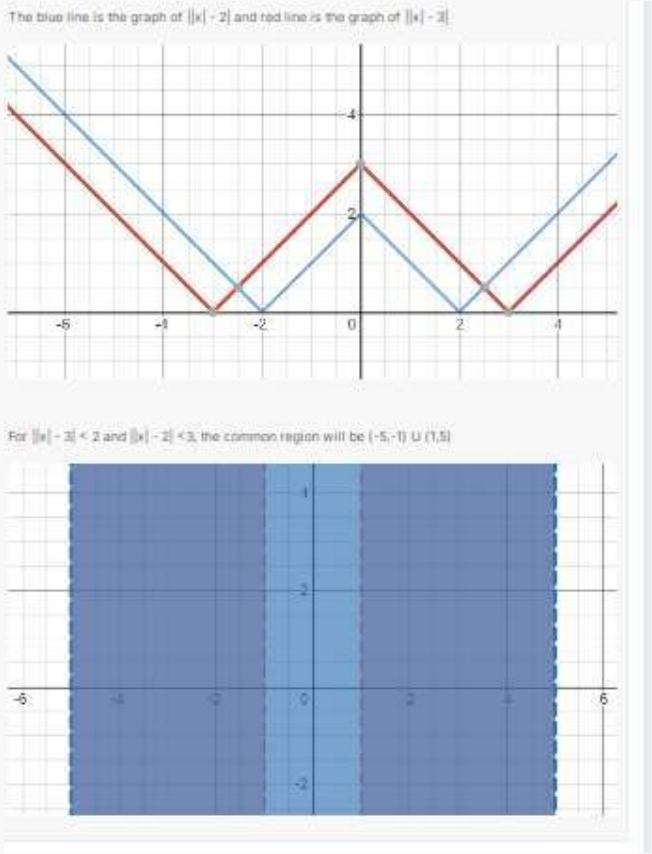
16. Correct Answer: D
Let the distance between the point P and Q be a
When B overtakes A for the first time, both of them cover 3a/10.
When B meets A after that, it (B) covers 7a/10 + 7a/30 = 28a/30, while A covers 23a/30 – 0.3a = 14a/30.
Therefore, B is twice as fast as A.
0.3a is the distance covered by both A and B
Let B catch travel for x hours from start before it meets A at 0.3a
Spd of A x Time taken = Spd of B x Time taken
1 x (1+x) = 2(x)
$\Rightarrow x = 1$
B covers 0.3a in 1 hour, so a will be covered in 1/0.3 = 10/3 hours

17. Correct Answer: D
Work completed per day if A,B,C work together
Total work = LCM(15,20,30) = 60
Per day work -> A: 60/15 = 4 units, B: 3 units, C = 2 units
If all work together, one day work = 9 units
60/9 = 6.66 days
So, our answer will definitely be more than this.

Only option greater than 6.66 is D

18. Correct Answer: B
Area of ||gm = b x h = 21
base is 7 units
So, h = 21/7 = 3 units
=> y coordinate of B will be 3
C lies on x = 3. So, B will lie on line x = 3+7 = 10
Coordinates are (10,3)

19. Correct Answer: A



20 . Correct Answer: D
2b = 2(a+c)
b = a+c
=> a - b + c = 0
If we keep -1 in the quadratic equation, we get a - b + c = 0
This is the same as was derived from the AP condition.
So, Option D is correct (-c/a will also satisfy the AP condition)

21. Correct Answer: C
Vol of sphere = $(4/3)\pi r^3$
$d = \sqrt{2}\, L \Rightarrow L = \sqrt{2}r$

So, height = r (pythagoras)
Vol of cone = $\pi r^2h/3 = \pi r^3/3$
Let max n cones be formed
=> $\pi r^3n/3 = (4/3)\pi r^3$
n = 4 whole

22. Correct Answer: D
Use property log A - log B = log A/B (when bases are same)
=> a-b/a+b = b/a
=> $a^2 - ab = ab + b^2$
=> $(a - b)^2 = 2b^2$
Let b = 1
=> $a - b = \sqrt{2}$
=> $a = \sqrt{2} + 1 = \sim 2.4$
So, $a^2/b^2 > 4$
b^2/a^2 , a positive quantity will be added to this
So, answer will definitely be more than 4
The only option is D (6)

23. Correct Answer: A
ATTRACT => AA, TTT, R, C
Total possible 3 letter words :
Case 1: 0 repetition --> 4! = 24
Case 2: 1 repetition -->2C1 x 3C2 x 3C1 = 18
Case 3: All same --> 1 case (TTT)
Total = 24+18+1 = 43

ATA, TAT, TTT will be same when seen in mirror
Words left = 43 - 3 = 40

24. Correct Answer: B
For n = 1, S = {1,2,3,4} (1 subset only)
None of the elements of S is the AM of other 3 elements of the subset
For n = 2, S = {1,2,3,4,5,6,7,8}
S1 = {1,3,4,8} -> 4 is AM of {1,3,8}
S2 = {2,5,6,7} -> 5 is AM of {2,6,7}
[a+b+c = 3d => 3, 6 should be in different subsets]
So, n = 2 is possible

25. Correct Answer: A
Check by options.
1001 gives remainder 2 when divided by 3
1881 is exactly divisible by 3
Both are rejected
121, 781 both satisfy the remaining conditions except the last one (lowest number) which 781 doesn't satisfy
=> 121 is the answer

26. Correct Answer: D
Numbers can't start with 2 and 9
Number of nos starting with 3 -> 4x3x2 = 24
Number of nos starting with 5 -> 4x3x2 = 24
Number of nos starting with 7 -> 4x3x2 = 24
Total numbers = 72

27. Correct Answer: D
Area= √3/4 x a^2 , where a is equal to side length
So area of bigger triangle of 10cm length = √3/4 x (10)^2
And area of smaller triangle of side 1cm = √3/4x(1)^2
So the ratio of smaller triangle: larger triangle = 100:1
So, 100 smaller triangles will be made in the larger triangle

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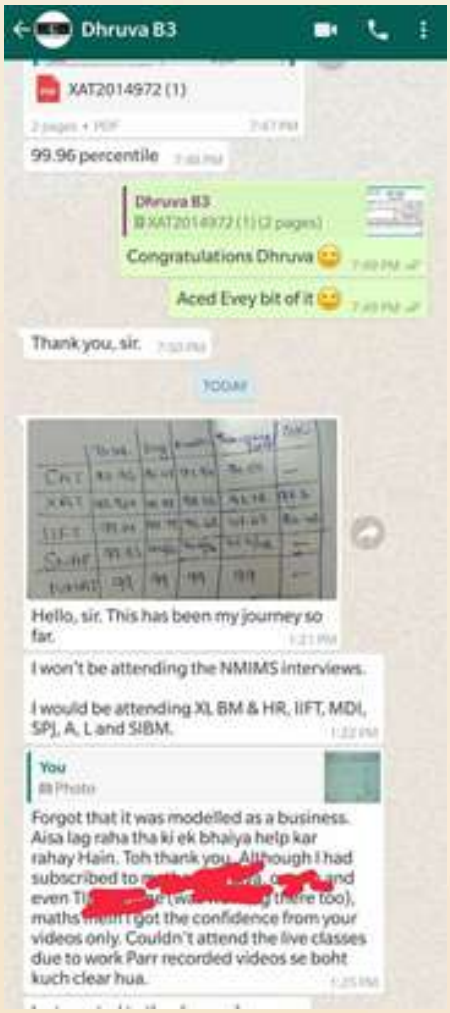

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