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Section 1 Verbal
Reading Comprehension

Language is not a cultural artifact that we learn the way we learn to tell time or how the federal government works. Instead, it is a distinct piece of the biological makeup of our brains. Language is a complex, specialized skill, which develops in the child spontaneously, without conscious effort or formal instruction, is deployed without awareness of its underlying logic, is qualitatively the same in every individual, and is distinct from more general abilities to process information or behave intelligently. For these reasons some cognitive researchers have described language as a psychological faculty, a mental organ, a neural system, and a computational module. But I prefer the admittedly quaint term "instinct". It conveys the idea that people know how to talk in more or less the sense that spiders know how to spin webs. Web-spinning was not invented by some unsung spider genius and does not depend on having had the right education or on having an aptitude for architecture or the construction trades. Rather, spiders spin spider webs because they have spider brains, which give them the urge to spin and the competence to succeed. Although there are differences between webs and words, I will encourage you to see language in this way, for it helps to make sense of the phenomena we will explore.

Thinking of language as an instinct inverts the popular wisdom, especially as it has been passed down in the canon of the humanities and social sciences. Language is no more a cultural invention than is upright posture. It is not a manifestation of a general capacity to use symbols: a three-year-old, we shall see, is a grammatical genius, but is quite incompetent at the visual arts, religious iconography, traffic signs, and the other staples of the semiotics curriculum. Though language is a magnificent ability unique to Homo sapiens among living species, it does not call for sequestering the study of humans from the domain of biology, for a magnificent ability unique to a particular living species is far from unique in the animal kingdom. Some kinds of bats home in on flying insects using Doppler sonar. Some kinds of migratory birds navigate thousands of miles by calibrating the positions of the constellations against the time of day and year. In nature's talent show, we are simply a species of primate with our own act, a knack for communicating information about who did what to whom by modulating the sounds we make when we exhale.

Once you begin to look at language not as the ineffable essence of human uniqueness hut as a biological adaptation to communicate information, it is no longer as tempting to see language as an insidious shaper of thought, and, we shall see, it is not. Moreover, seeing language as one of nature's engineering marvels — an organ with "that perfection of structure and co-adaptation which justly excites our admiration," in Darwin's words - gives us a new respect for your ordinary Joe and the much-maligned English language (or any language). The complexity of language, from the researcher's point of view, is part of our biological birthright; it is not something that parents teach their children or something that must be elaborated in school — as Oscar Wilde said, "Education is an admirable thing, but it is well to remember from time to time that nothing that is worth knowing can be taught." A preschooler's tacit knowledge of grammar is more sophisticated than the thickest style manual or the most state-of-the-art computer language system, and the same applies to all healthy human beings, even the notorious syntax fracturing professional athlete and the, you know, like, inarticulate teenage skateboarder. Finally, since language is the product of a well engineered biological instinct, we shall see that it is not the nutty barrel of monkeys that entertainer columnists make it out to be.

1. According to the passage, all of the following stem from popular wisdom on language Except?
(1) Language is a cultural artifact.

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(2) Language is a cultural invention.
(3) Language is learnt as we grow.
(4) Language is a psychological faculty.

2. Which of the following can be used as parallel reasoning for the "spiders know how to spin webs" analogy as used by the author?
(1) A kitten learning to jump over a wall
(2) Bees collecting nectar
(3) A donkey carrying a load
(4) A horse running a Derby

3. According to the passage, which of the following is unique to human beings?
(1) Ability to use symbols while communicating with one another.
(2) Ability to communicate with each other through voice modulation.
(3) Ability to communicate information to other members of the species.
(4) Ability to use sound as means of communication.

4. According to the passage, complexity of language cannot be taught by parents or at school to children because
(1) children instinctively know language.
(2) children learn the language on their own.
(3) language is not amenable to teaching.
(4) children know language better than their teachers or parents.

5. Which of the following best summarizes the passage?
(1) Language is unique to Homo sapiens.
(2) Language is neither learnt nor taught.
(3) Language is not a cultural invention or artifact as it is made out.
(4) Language is instinctive ability of human beings.

6. Why author has referred to 'preschooler's tacit knowledge of grammar'
(1) To prove that Language is unique to Homo sapiens.
(2) Used as an analogy for healthy human beings
(3) To prove his point that language is not a cultural invention or artifact as it is made out.
(4) To compare children instinctively know language.

If American policy towards Europe in the postwar years had been a conspicuous success, and towards Asia a disappointing balance between success and failure, it could be said that the most conspicuous thing about relations with Latin America was the absence of any policy. Franklin Roosevelt, to be sure, had launched a "Good Neighbour" policy, but being a good neighbour was, it seemed, a negative rather than a positive affair, a matter of keeping hands off, of making the Monroe Doctrine, in form at least, multilateral. All through the postwar years, the states of Latin America - - Mexico and Chile were partial exceptions - - were in the throes of major economic and social crises. Population was growing faster than in any other part of the globe, without a comparable increase in wealth or productivity; the gap between the poor and the rich was widening; and as the rich and powerful turned to the military for the preservation of order and privilege, the poor turned to revolution.

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Deeply involved in other quarters of the globe, the United States paid little attention to the fortunes or misfortunes of her neighbours to the south, and when she did intervene, it appeared to be on the side of order and the status quo rather than on the side of reform. So frightened was the United States of "Communism" in Latin America that it preferred military dictatorship to reformers who might drift too far to the "left", and sustained a Batista in Cuba, a Trujillo in the Dominican Republic, a Peron in Argentina, and a Jimenez in Venezuela.

In his last two years, President Eisenhower had tried to mend his Latin American fences. Though rejecting a Brazilian proposal of a Marshall Plan for Latin America, he did take the initiative in setting up an Inter-American development Bank with a capital of one billion dollars, almost half of it supplied by the United States. Other government investments in Latin America ran to some four million dollars, while private investments exceeded nine billion. Yet though to most Americans, all this seemed a form of economic aid, many Latin Americans regarded it as economic imperialism. In September 1960, came a co-operative plan that could not be regarded as other than enlightened: the Act of Bogota, which authorized a grant of half a billion dollars to subsidize not only economic but social and educational progress in Latin America. "We are not saints", said President Eisenhower when he visited Santiago de Chile, "We know we make mistakes, but our heart is in the right place".

But was it? President Kennedy was confronted by the same dilemma that had perplexed his predecessors. Clearly it was essential to provide a large-scale aid to the countries south of Rio Grande, but should this aid go to bolster up established regimes and thus help maintain status quo, or should it be used to speed up social reforms, even at the risk of revolt? As early as 1958, the then Senator Kennedy had asserted that "the objective of our aid program in Latin America should not be to purchase allies, but to consolidate a free and democratic Western Hemisphere, alleviating those conditions which might foster opportunities for communistic infiltration and uniting our peoples on the basis of constantly increasing living standards".

This conviction that raising the standards of living was the best method of checking Communism now inspired President Kennedy's bold proposal for the creation of the alliance for progress - - a ten year plan designed to do for Latin America what Marshall Plan had done for Western Europe. It was to be "a peaceful revolution on a hemispheric scale, a vast cooperative effort, unparalleled in magnitude and nobility of purpose, to satisfy the basic needs of the American people for homes, work, land, health and schools. "To achieve this, the United States pleaded an initial grant of one billion dollars, with the promise of additional billions for the future.

7. Following World War II, which problem was the United States most concerned with regarding Latin America?
(a) Economic stability.
(b) Political ideology.
(c) Religious persecution.
(d) Military dictatorship.

8. A key reason why Latin American rejected the Inter-American development Bank was that
(a) it primarily provided money for social reform subsidies.
(b) the moneys provided were only for specific performance projects.
(c) it constituted an extension of the Marshall Plan into Latin America
(d) it was being used as a means to control the economic destiny of Latin America.

9. Which of the following is most closely associated with the concept of a Marshall Plan for Latin America?

(a) The Good Neighbour Policy.
(b) The Alliance for Progress.
(c) The Act of Bogota.
(d) The Monroe Doctrine.

10. According to the passage, the fundamental change in U.S. foreign policy directed towards Latin America
(a) resulted in a deterioration of U.S. Latin American relations.
(b) was responsible for Peron remaining as a dictator in Peru.
(c) recognized that economic aid alone would prevent social revolutions.
(d) provided for increased military and economic aid to prevent the spread of communism in Latin America.

11. All of the following statements are true, except?
(a) Mexico and Chile did not experience the general social crises that are common to the majority of Latin American countries.
(b) President Eisenhower continued in practice the theory that economic aid was the best defense against communist incursion into Latin America
(c) The Good Neighbour Policy favoured a multilateral interpretation of the Monroe Doctrine.
(d) The traditional U.S. approach in Latin America was to protect the status quo.

12. Which of the inferences can be drawn if everything said in the passage were assumed to be true?
(a) Rebellions are fuelled by social reforms and avoided by supporting established authorities or continuing the present state of affairs.
(b) The American policy towards Asia can be called an overall success, though small in magnitude.
(c) Kennedy, in 1958, wanted America to aid South American countries to acquire more support in their fight against communism.
(d) Eisenhower rejected the Marshall Plan, whereas Kennedy implemented a similar one.

Last fortnight, news of a significant development was tucked away in the inside pages of newspapers. The government finally tabled a bill in Parliament seeking to make primary education a fundamental right. A fortnight earlier, a Delhi-based newspaper had carried a report about a three-month interruption in the Delhi Government's 'Education for All' programme. The report made for distressing reading. It said that literacy centres across the city were closed down, volunteers beaten up and enrolment registers burnt. All because the state government had, earlier this year, made participation in the programme mandatory for teachers in government schools. The routine denials were issued and there probably was a wee bit of exaggeration in the report. But it still is a pointer to the enormity of the task at hand.

That economic development will be inherently unstable unless it is built on a solid base of education, specially primary education, has been said so often that it is in danger of becoming a platitude. Nor does India's abysmal record in the field need much reiteration. Nearly 30 million children in the six to ten age group do not go to school — reason enough to make primary education not only compulsory but a fundamental right. But is that the solution? More importantly, will it work? Or will it remain a mere token, like the laws providing for compulsory primary education? It is now widely known that 14 states and four Union Territories have this law on their statute books. Believe it or not, the list actually includes Bihar, Madhya Pradesh (MP) and Rajasthan, where literacy and education levels are

miles below the national average. A number of states have not even notified the compulsory education law.

This is not to belittle the decision to make education a fundamental right. As a statement of political will, a commitment by the decision-makers, its importance cannot be undervalued. Once this commitment is clear, a lot of other things like resource allocation will naturally fall into place. But the task of universalizing elementary education (UEE) is complicated by various socio-economic and cultural factors which vary from region to region and within regions.

If India's record continues to appall, it is because these intricacies have not been adequately understood by the planners and administrators. The trouble has been that education policy has been designed by grizzled mandarins ensconced in Delhi and is totally out of touch with the ground reality. The key then is to decentralise education planning and implementation. What's also needed is greater community involvement in the whole process. Only then can school timings be adjusted for convenience, school children given a curriculum they can relate to and teachers made accountable.

For proof, one has only to look at the success of the district primary education programme, which was launched in 1994. It has met with a fair degree of success in the 122 districts it covers. Here the village community is involved in all aspects of education — allocating finances to supervising teachers to fixing school timings and developing curriculum and textbooks — through district planning teams. Teachers are also involved in the planning and implementation process and are given small grants to develop teaching and learning material, vastly improving motivational levels. The consequent improvement in the quality of education generates increased demand for education.

But for this demand to be generated, quality will first have to be improved. In MP, the village panchayats are responsible for not only constructing and maintaining primary schools but also managing scholarships, besides organising non-formal education. How well this works in practice remains to be seen (though the department claims the schemes are working very well) but the decision to empower panchayats with such powers is itself a significant development. Unfortunately, the Panchayat Raj Act has not been notified in many states. After all, delegating powers to the panchayats is not looked upon too kindly by vested interests.

More specifically, by politicians, since decentralisation of education administration takes away from them the power of transfer, which they use to grant favours and build up a support base. But if the political leadership can push through the bill to make education a fundamental right, it should also be able to persuade the states to implement the laws on Panchayat Raj. For, UEE cannot be achieved without decentralisation. Of course, this will have to be accompanied by proper supervision and adequate training of those involved in the administration of education. But the devolution of powers to the local bodies has to come first.

13.None of these problems are plaguing the education system in India Except
a. poverty.
b. diverse cultural and socio-economic factors.
c. male chauvinism.
d. Celebrating festivals

14.In the context of the passage, the term 'grizzled mandarins' means
a. old hags.
b. decrepit men.

c. ineffective old men.
d. None of these

15.One of the reasons contributing to India's poor performance on the education front is that
a. its leaders do not have the conviction required to improve the education system.
b. male members of society do not want their female counterparts to be educated.
c. administrators in charge of education are out of touch with ground realities.
d. the country does not have the law for implementation of education policies in its statute books.

16.The only way in which the education system can be improved is by
a. decentralising education planning and implementation.
b. introducing fresh blood in the planning body.
c. injecting funds into the exchequer solely for the purpose.
d. educating the people on the need for primary education.

17.Primary education
a. is a fundamental right.
b. will be made a fundamental right.
c. is only for the privileged sections of society.
d. None of these

18.Education policy cannot be successfully implemented by any of the following Except?
a. greater community involvement.
b. greater community development.
c. greater community awareness.
d. Greater community experience

Directions for questions 31 to 34: The passage given below is followed by a set of four questions. Choose the best answer to each question.

A game of strategy, as currently conceived in game theory, is a situation in which two or more "players" make choices among available alternatives (moves). The totality of choices determines the outcomes of the game, and it is assumed that the rank order of preferences for the outcomes is different for different players. Thus the "interests" of the players are generally in conflict. Whether these interests are diametrically opposed or only partially opposed depends on the type of game. Psychologically, most interesting situations arise when the interests of the players are partly coincident and partly opposed, because then one can postulate not only a conflict among the players but also inner conflicts within the players. Each is torn between a tendency to cooperate, so as to promote the common interests, and a tendency to compete, so as to enhance his own individual interests.

Internal conflicts are always psychologically interesting. What we vaguely call "interesting" psychology is in very great measure the psychology of inner conflict. Inner conflict is also held to be an important component of serious literature as distinguished from less serious genres. The classical tragedy, as well as the serious novel reveals the inner conflict of central figures. The superficial adventure story on the other hand, depicts only external conflict; that is, the threats to the person with whom the reader (or viewer) identifies stem in these stories exclusively from external obstacles and from the adversaries who create them. On the most primitive level this sort of external conflict is psychologically empty. In the fisticuffs between the protagonists of good and evil, no psychological problems are involved or, at any rate, none are depicted in juvenile representations of conflict.

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The detective story, the "adult" analogue of a juvenile adventure tale, has at times been described as a glorification of intellectualized conflict. However, a great deal of the interest in the plots of these stories is sustained by withholding the unraveling of a solution to a problem. The effort of solving the problem is in itself not a conflict if the adversary (the unknown criminal) remains passive, like Nature, whose secrets the scientist supposedly unravels by deduction. If the adversary actively puts obstacles in the detective's path toward the solution, there is genuine conflict. But the conflict is psychologically interesting only to the extent that it contains irrational components such as a tactical error on the criminal's part or the detective's insight into some psychological quirk of the criminal or something of this sort. Conflict conducted in a perfectly rational manner is psychologically no more interesting than a standard Western.

For example, Tic-tac-toe, played perfectly by both players, is completely devoid of psychological interest. Chess may be psychologically interesting but only to the extent that it is played not quite rationally. Played completely rationally, chess would not be different from Tic-tac-toe.

In short, a pure conflict of interest (what is called a zero-sum game) although it offers a wealth of interesting conceptual problems, is not interesting psychologically, except to the extent that its conduct departs from rational norms.

19.Find the main idea of the passage?
(1) To explain game of strategy
(2) To explain detective's path
(3) To explain juvenile representations of conflict
(4) None of these

20.According to the passage, internal conflicts are psychologically more interesting than external conflicts because
(1) internal conflicts, rather than external conflicts, form an important component of serious literature as distinguished from less serious genres.
(2) only juveniles or very few "adults" actually experience external conflict, while internal conflict is more widely prevalent in society.
(3) in situations of internal conflict, individuals experience a dilemma in resolving their own preferences for different outcomes.
(4) there are no threats to the reader (or viewer) in case of external conflicts.

21. Which, according to the author, would qualify as interesting psychology?
(1) A statistician's dilemma over choosing the best method to solve an optimization problem.
(2) A chess player's predicament over adopting a defensive strategy against an aggressive opponent.
(3) A mountaineer's choice of the best path to Mt. Everest from the base camp.
(4) A finance manager's quandary over the best way of raising money from the market.

22. According to the passage, which of the following options about the application of game theory to a conflict-of-interest situation is true?
(1) Assuming that the rank order of preferences for options is different for different players.
(2) Accepting that the interests of different players are often in conflict.
(3) Not assuming that the interests are in complete disagreement.
(4) All of the above.

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23. The problem solving process of a scientist is different from that of a detective because
(1) scientists study inanimate objects, while detectives deal with living criminals or law offenders.
(2) scientists study known objects, while detectives have to deal with unknown criminals or law offenders.
(3) scientists study phenomena that are not actively altered, while detectives deal with phenomena that have been deliberately influenced to mislead.
(4) scientists study psychologically interesting phenomena, while detectives deal with "adult" analogues of juvenile adventure tales.

24. How Tic-tac-toe as a game is different from Chess?
(1) Games like Tic-tac-toe is played in a perfectly rational manner is psychologically no more interesting than chess which is played not quite rationally.
(2) Both games are same when it comes to pure conflict of interest.
(3) Both games are played psychology of inner conflict
(4) Tic-tac-toe is a juvenile adventure tale, while chess at times been described as a glorification of intellectualized conflict.

Section 1 Verbal
Verbal Ability

25. Answer the following question on the basis of this paragraph and mark the correct option in the given box.
Parents usually do not insist that their children learn to walk by a certain age. Parents feel confident that the children will learn to walk within a reasonable period of time, when their bodies are ready for such an undertaking. Teachers should adopt the same attitude when teaching children in school how to read. If teachers did this, children might learn to read much more quickly and experience less anxiety while doing so.

Which of the following best describes the Essence or structure of the passage?
A. How children learn one kind of activity is described and then this method is recommended for teaching children another kind of activity.
B. Two different views of how children should be taught to read are compared and contrasted.
C. A view of how children should be taught is described and then criticized.
D. Contrasting views of parents and teachers on how quickly children actually learn are described and then analyzed.
E. The amount of time it take for children to learn one kind of activity is described and then used to predict how long it will take them to learn another kind of activity.

Type in the answer here: _____

26. The sentences given, when properly sequenced, form a coherent paragraph. Each sentence is labeled with a letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. Sentence 1 and 6 are fixed starting and ending of the paragraph. Type the correct order in the given space.

1. Amount of published information available varies widely by industry.

A. Unfortunately for the researcher, many industries do not meet these criteria, and there may be little published information available.

B. Generally, the problem the researcher will face in using published data for analysing an economically meaningful industry is that they are too broad or too arranged to fit the industry.

C. However, it is always possible to gain some important information about an industry from published sources and these sources should be aggressively pursued. D. Larger the industry, the older it is, and the slower the rate of technological change, better is the available published information.

6. If a researcher starts a searching for data with this reality in mind, the uselessness of broad data will be better recognized and the tendency to give up will be avoided.

Type in the answer here: ____

27.In the following question a paragraph from which the last sentence has been deleted. From the given options, choose the sentence that completes the paragraph in the most appropriate way. Type the correct option number in the given space below.

Trade protectionism, disguised as concern for the climate, is raising its head. Citing competitiveness concerns, powerful industrialized countries are holding out threats of a levy on imports of energy-intensive products from developing countries that refuse to accept their demands. The actual source of protectionist sentiment in the OECD countries is, of course, their current lacklustre economic performance, combined with the challenges posed by the rapid economic rise of China and India - in that order.

(1) Climate change is evoked to bring trade protectionism through the back door.
(2) OECD countries are taking refuge in climate change issues to erect trade barriers against these two countries.
(3) Climate change concerns have come as a convenient stick to beat the rising trade power of China and India.
(4) Defenders of the global economic status quo are posing as climate change champions.
(5) Today's climate change champions are the perpetrators of global economic inequity.

Type in the answer here: ____

28.Answer the following question on the basis of this paragraph and mark the correct option in the given box.

Whatever their disadvantage with respect to distributing education tax dollars equally among school districts, in one respect at least, local property taxes are superior to state taxes as a means of funding public schools. Because local property taxes provide public schools with a direct source of revenue, these public schools are relatively free from competition for tax dollars with other government services. School administrators do not have to compete for a share of the state tax dollars, which are already being spent on health, criminal justice, public safety, and transportation. They are not placed in the position of having to argue that school programs must have priority over other public services financed by state taxes.

Which of the following statements best expresses essence of the passage?

A. Education is more important than other government services, such as criminal justice or public safety.

B. The disadvantage of local property taxes is that they do not equally distribute tax dollars spent on education.

C. School administrators are not accustomed to arguing that their programs must have priority over other government services.

D. Financing education with local property taxes has the advantage of eliminating competition for funding between schools and other public services.

E. School administrators must be prepared to justify the funds they spend on education programs.

Type in the answer here: _____

29. In the following question a paragraph from which the last sentence has been deleted. From the given options, choose the sentence that completes the paragraph in the most appropriate way. Type the correct option number in the given space below.

Most people at their first consultation take a furtive look at the surgeon's hands in the hope of reassurance. Prospective patients look for delicacy, sensitivity, steadiness, perhaps unblemished pallor. On this basis, Henry Perowne loses a number of cases each year. Generally, he knows it's about to happen before the patient does: the downward glance repeated, the prepared questions beginning to falter, the overemphatic thanks during the retreat to the door.

(1) Other people do not communicate due to their poor observation.

(2) Other patients don't like what they see but are ignorant of their right to go elsewhere.

(3) But Perowne himself is not concerned.'

(4) But others will take their place, he thought.

(5) These hands are steady enough, but they are large.

Type in the answer here: _____

30. The sentences given, when properly sequenced, form a coherent paragraph. Each sentence is labeled with a letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. Sentence 1 and 6 are fixed starting and ending of the paragraph. Type the correct order in the given space.

1. Intensity of competition in an industry is neither a matter of coincidence nor bad luck.

A. The collective strength of these forces determines the ultimate profit potential in the industry where profit potential is measured in terms of long run returns on invested capital.

B. Rather, competition in an industry is rooted in its underlying economic structure and goes well beyond the behavior of current competitors.

C. Not all industries have the same potential.

D. The state of competition in an industry depends on five basic competitive forces.

6. They differ fundamentally in their ultimate profit potential as the collective strength of the forces differs.

Type in the answer here: _____

31. Answer the following question on the basis of this paragraph and mark the correct option in the given box.

Shakespeare wrote four types of plays: histories, comedies, tragedies, and tragicomedies. Some scholars contend that Shakespeare's choice of three of these types of dramatic forms reflects his various psychological states. As a young man making a name for himself in London, he wrote comedies. Then, saddened by the death of this son, he turned to tragedies. Finally, seasoned by life's joys and sorrows, he produced tragicomedies. But a look at the theater scene of his day reveals that Shakespeare was not so much writing out of his heart as into his pocketbook. When comedies were

the vogue, he wrote comedies; when tragedies were the rage, he wrote tragedies; and when tragicomedies dominated the stage, he produced tragicomedies.

Which of the following statements best expresses essence of the passage?
A. Examine Shakespeare's life in light of his dramatic works
B. Contest a theory that attempts to explain why Shakespeare wrote the kinds of plays he did
C. Explain the terms "comedy," "tragedy," and "tragicomedy" as they are used in discussions of Shakespeare's plays
D. Compare Shakespeare's plays with the works of other dramatists of his day
E. Discuss what is known about Shakespeare's psychological states

Type in the answer here: ____

32. The sentences given, when properly sequenced, form a coherent paragraph. Each sentence is labeled with a letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. Type the correct order in the given space.

A. A few months ago I went to Princeton University to see what the young people who are going to be running our country in a few decades are like.
B. I would go to sleep in my hotel room around midnight each night, and when I awoke, my mailbox would be full of replies—sent at 1:15 a.m., 2:59 a.m., 3:23 a.m.
C. One senior told me that she went to bed around two and woke up each morning at seven; she could afford that much rest because she had learned to supplement her full day of work by studying in her sleep.
D. Faculty members gave me the names of a few dozen articulate students, and I sent them e-mails, inviting them out to lunch or dinner in small groups.
E. As she was falling asleep she would recite a math problem or a paper topic to herself; she would then sometimes dream about it, and when she woke up, the problem might be solved.

Type in the answer here: ____

33. In the following question a paragraph from which the last sentence has been deleted. From the given options, choose the sentence that completes the paragraph in the most appropriate way. Type the correct option number in the given space below.

Mattancherry is Indian Jewry's most famous settlement. Its pretty streets of pastel coloured houses, connected by first-floor passages and home to the last twelve saree-and-sarong-wearing, whiteskinned Indian Jews are visited by thousands of tourists each year. Its synagogue, built in 1568, with a floor of blue-and-white Chinese tiles, a carpet given by Haile Selassie and the frosty Yaheh selling tickets at the door, stands as an image of religious tolerance.
(1) Mattancherry represents, therefore, the perfect picture of peaceful co-existence.
(2) India's Jews have almost never suffered discrimination, except for European colonizers and each other.
(3) Jews in India were always tolerant.
(4) Religious tolerance has always been only a façade and nothing more.
(5) The pretty pastel streets are, thus, very popular with the tourists.

Type in the answer here: ____

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34.The sentences given, when properly sequenced, form a coherent paragraph. Each sentence is labeled with a letter. Choose the most logical order of sentences from among the given choices to construct a coherent paragraph. Type the correct order in the given space.

A.Four days later, Infosist announced its own bid for PepSoftware, and invited the firm's board to a discussion.

B.Furious that his own plans had been endangered, PepSoftware's boss, Chandan Shah, called Infosist's offer "diabolical", and its boss, Laxman, a "sociopath".

C.In early June, PepSoftware said that it would buy J.D.Soft, a smaller rival.

D.Moreover, said Mr. Shah, he "could imagine no price nor combination of price and other conditions to recommend accepting the offer."

E.On June 12th, PepSoftware turned Infosist down.

Type in the answer here: ____

CAT 2015 based paper

Section 2 DI LR

Data Interpretation

Answer the questions on the basis of the information given below.

Purana and Naya are two brands of kitchen mixer-grinders available in the local market. Purana is an old brand that was introduced in 1990, while Naya was introduced in 1997. For both these brands, 20% of the mixer-grinders bought in a particular year are disposed off as junk exactly two years later. It is known that 10 Purana mixer-grinders were disposed off in 1997. The following figures show the number of Purana and Naya mixer-grinders in operation from 1995 to 2000, as at the end of the year.
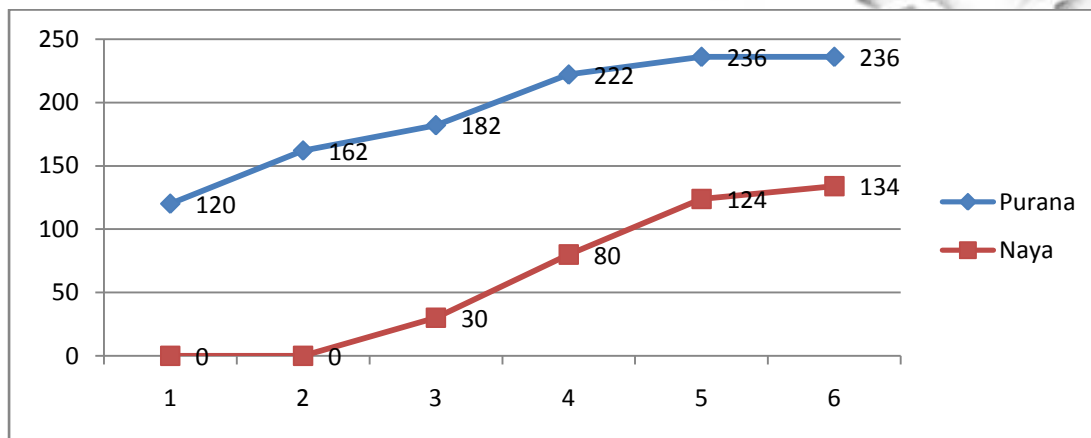
1. How many Naya mixer-grinders were purchased in 1999?
(1) 44
(2) 50
(3) 55
(4) 64

2. How many Naya mixer-grinders were disposed off by the end of 2000?
(1) 10
(2) 16
(3) 22
(4) Cannot be determined from the data

3. How many Purana mixer-grinders were disposed off in 2000?
(1) 0
(2) 5
(3) 6
(4) Cannot be determined from the data

4. How many Purana mixer-grinders were purchased in 1999?
(1) 20
(2) 23
(3) 50
(4) Cannot be determined from the data

CAT 2015 based paper

Answer the questions on the basis of the information given below. A study was conduced to ascertain the relative importance that employees in five different countries assigned to five different traits in their Chief Executive Officers. The traits were compassion (C), decisiveness (D), negotiation skills (N), public visibility (P), and vision (V). The level of dissimilarity between two countries is the maximum difference in the ranks allotted by the two countries to any of the five traits. The following table indicates the rank order of the five traits for each country.

Rank	India	China	Japan	Malaysia	Thailand
1	C	N	D	V	V
2	P	C	N	D	C
3	N	P	C	P	N
4	V	D	V	C	P
5	D	V	P	N	D

5. Which of the following pairs of countries are most dissimilar?
(1) China and Japan
(2) India and China
(3) Malaysia and Japan
(4) Thailand and Japan

6. Which of the following countries is least dissimilar to India?
(1) China
(2) Japan
(3) Malaysia
(4) Thailand

7. Which amongst the following countries is most dissimilar to India?
(1) China
(2) Japan
(3) Malaysia
(4) Thailand

8. Three of the following four pairs of countries have identical levels of dissimilarity. Which pair is the odd one out?
(1) Malaysia and China
(2) China and Thailand
(3) Thailand and Japan
(4) Japan and Malaysia

CAT 2015 based paper

Answer the questions based on the table given below. The table below gives information about four different crops, their different quality, categories and the regions where they are cultivated. Based on the information given in the table answer the questions below.

Quality		Region				
Crop 1	High	R1,	R2,	R3,	R4,	R5
	Medium	R6,	R7,	R8		
	Low	R9,	R10,	R11		
Crop 2	High	R5,	R8,	R12		
	Medium	R9,	R13			
	Low	R6,	R7,	R8		
Crop 3	High	R2,	R6,	R7.	R13	
	Medium	R3,	R9,	R11		
	Low	R1,	R4			
Crop 4	High	R3,	R10,	R11		
	Medium	R1,	R2,	R4		
	Low	R5,	R9			

9. How many regions produce medium qualities of Crop-1 or Crop-2 and also produce low quality of Crop-3 or Crop-4?
1. Zero
2. One
3. Two
4. Three

10. Which of the following statements is true?
1. All medium quality Crop-2 producing regions are also high quality Crop-3 producing regions.
2. All high quality Crop-1 producing regions are also medium and low Crop-4 producing regions.
3. There are exactly four Crop-3 producing regions, which also produce Crop-4 but not Crop-2.
4. Some Crop-3 producing regions produce Crop-1, but not high quality Crop-2.

11. How many low quality Crop-1 producing regions are either high quality Crop-4 producing regions or medium quality Crop-3 producing regions?
1. One
2. Two
3. Three
4. Zero

12. How many high quality Crop-1 producing regions are low quality Crop-3 producing regions?
1. One
2. Two
3. Three
4. Zero

CAT 2015 based paper

Answer the following questions based on the information given below: In a sports event, six teams (A, B, C, D, E and F) are competing against each other. Matches are scheduled in two stages. Each team plays three matches in stage – I and two matches in Stage – II. No team plays against the same team more than once in the event. No ties are permitted in any of the matches. The observations after the completion of Stage – I and Stage – II are as given below.

Stage-I:
• One team won all the three matches.
• Two teams lost all the matches.
• D lost to A but won against C and F.
• E lost to B but won against C and F.
• B lost at least one match.
• F did not play against the top team of Stage-I.

Stage-II:
• The leader of Stage-I lost the next two matches.
• Of the two teams at the bottom after Stage-I, one team won both matches, while the other lost both matches.
• One more team lost both matches in Stage-II.

13. The two teams that defeated the leader of Stage-I are:
(1) F & D
(2) E & F
(3) B & D
(4) E & D
(5) F & D

14. The only team(s) that won both matches in Stage-II is (are):
(1) B
(2) E & F
(3) A, E & F
(4) B, E & F
(5) B & F

15. The teams that won exactly two matches in the event are:
(1) A, D & F
(2) D & E
(3) E & F
(4) D, E & F
(5) D & F

16. The team(s) with the most wins in the event is (are):
(1) A
(2) A & C
(3) F
(4) E
(5) B & E

CAT 2015 based paper

Section 2 DI LR

Logical Reasoning

Answer the questions on the basis of the information given below:

Two traders, Harshit and Dhara, were involved in the buying and selling of MCS shares over five trading days. At the beginning of the first day, the MCS share was priced at Rs 100, while at the end of the fifth day it was priced at Rs 110. At the end of each day, the MCS share price either went up by Rs 10, or else, it came down by Rs 10. Both Harshit and Dhara took buying and selling decisions at the end of each trading day. The beginning price of MCS share on a given day was the same as the ending price of the previous day. Harshit and Dhara started with the same number of shares and amount of cash, and had enough of both. Below are some additional facts about how Harshit and Dhara traded over the five trading days.

Each day if the price went up, Harshit sold 10 shares of MCS at the closing price. On the other hand, each day if the price went down, he bought 10 shares at the closing price. 2 If on any day, the closing price was above Rs 110, then Dhara sold 10 shares of MCS, while if it was below Rs 90, he bought 10 shares, all at the closing price.

17.If Harshit sold 10 shares of MCS on three consecutive days, while Dhara sold 10 shares only once during the five days, what was the price of MCS at the end of day 3?
(1) Rs 90
(2) Rs 100
(3) Rs 110
(4) Rs 120
(5) Rs 130

18. If Harshit ended up with Rs 1300 more cash than Dhara at the end of day 5, what was the price of MCS share at the end of day 4?
(1) Rs 90
(2) Rs 100
(3) Rs 110
(4) Rs 120
(5) Not uniquely determinable

19. If Dhara ended up with 20 more shares than Harshit at the end of day 5, what was the price of the share at the end of day 3?
(1) Rs 90
(2) Rs 100
(3) Rs 110
(4) Rs 120
(5) Rs 130

20.What could have been the maximum possible increase in combined cash balance of Harshit and Dhara at the end of the fifth day?
(1) Rs 3700
(2) Rs 4000
(3) Rs 4700
(4) Rs 5000
(5) Rs 6000

CAT 2015 based paper

Answer the questions on the basis of the information given below:

Mathematicians are assigned a number called Zohos number (named after the famous mathematician, Paul Zohos). Only Paul Zohos himself has an Zohos number of zero. Any mathematician who has written a research paper with Zohos has an Zohos number of 1. For other mathematicians, the calculation of his/ her Zohos number is illustrated below:

Suppose that a mathematician X has co-authored papers with several other mathematicians. From among them, mathematician Y has the smallest Zohos number. Let the Zohos number of Y be y. Then X has an Zohos number of y+1 . Hence any mathematician with no co-authorship chain connected to Zohos has an Zohos number of infinity.

In a seven day long mini-conference organized in memory of Paul Zohos, a close group of eight mathematicians, call them A, B, C, D, E, F, G and H, discussed some research problems. At the beginning of the conference, A was the only participant who had an infinite Zohos number. Nobody had an Zohos number less than that of F.

1 On the third day of the conference F co-authored a paper jointly with A and C. This reduced the average Zohos number of the group of eight mathematicians to 3. The Zohos numbers of B, D, E, G and H remained unchanged with the writing of this paper. Further, no other co-authorship among any three members would have reduced the average Zohos number of the group of eight to as low as 3.

2 At the end of the third day, five members of this group had identical Zohos numbers while the other three had Zohos numbers distinct from each other.

3 On the fifth day, E co-authored a paper with F which reduced the group's average Zohos number by 0.5. The Zohos numbers of the remaining six were unchanged with the writing of this paper.

4 No other paper was written during the conference.

21.How many participants in the conference did not change their Zohos number during the conference?

Type in the answer here: _____

22.The person having the largest Zohos number at the end of the conference must have had Zohos number (at that time):

Type in the answer here: _____

23.How many participants had the same Zohos number at the beginning of the conference?

Type in the answer here: _____

24.The Zohos number of C at the end of the conference was:

Type in the answer here: _____

CAT 2015 based paper

Answer the questions on the basis of the information given below. Coach John sat with the score cards of Indian players from the 3 games in a one-day cricket tournament where the same set of players played for India and all the major batsmen got out. John summarized the batting performance through a table, one column for each game. In each column, the three entries communicate the number of runs scored by the three top scores from India. The last row in the table denotes the percentage of the total score that was scored by the top three Indian scorers in that game. No two players score the same number of runs in the same game. John also calculated two batting indices for each player based on his scores in the tournaments; the R-index of a batsman is the difference between his highest and lowest scores in the 3 games while the M-index is the middle number, if his scores are arranged in a non-increasing order.

Player	Pakistan	South Africa	Australia
Yuvraj	40		87
Virender	130		
Kaif	28	51	
Saurav		75	50
Rahul		49	55
Percentage	**90%**	**70%**	**80%**

25.For how many Indian players is it possible to calculate the exact M-index?
(1) 0
(2) 1
(3) 2
(4) More than 2

26.Among the players mentioned, who can have the lowest R-index from the tournament?
(1) Only Kaif, Rahul or Yuvraj
(2) Only Kaif or Rahul
(3) Only Kaif or Yuvraj
(4) Only Kaif

27.How many players among those listed definitely scored less than Yuvraj in the tournament?
(1) 0
(2) 1
(3) 2
(4) More than 2

28. Which of the players had the best M-index from the tournament?
(1) Rahul
(2) Saurav
(3) Virender
(4) Yuvraj

CAT 2015 based paper

Answer the following questions based on the information given below:

For admission to various affiliated colleges, a university conducts a written test with four different sections, each with a maximum of 50 marks. The following table gives the aggregate as well as the sectional cut-off marks fixed by six different colleges affiliated to the university. A student will get admission only if he/she gets marks greater than or equal to the cut-off marks in each of the sections and his/her aggregate marks are at least equal to the aggregate cut-off marks as specified by the college.

College	Sectional Cut – off Marks				
	A. Quant	B. Verbal	C. Logic	D. DI	Aggregate Cut-off Marks
College 1	42	42	42		176
College 2		45	45		175
College 3			46		171
College 4	43			45	178
College 5	45		43		180
College 6		41		44	176

29. Ramaya got calls from all colleges. What could be the minimum aggregate marks obtained by her?

Type in the answer here: _____

30. Gauri got calls from two colleges. What could be the minimum marks obtained by him in a section?

Type in the answer here: _____

31. Minakshi did not get a call from even a single college. What could be the maximum aggregate marks obtained by him?

Type in the answer here: _____

32. What is the maximum score required by a Cetking student in Section D so that student clear all colleges cut-off?

Type in the answer here: _____

CAT 2015 based paper

Section 3 Quant

1. A person who has a certain amount with him goes to market. He can buy 50 oranges or 40 mangoes. He retains 10% of the amount for taxi fares and buys 20 mangoes and of the balance he purchases oranges. Number of oranges he can purchase is
a. 36
b. 40
c. 15
d. 20

2. 2/5 of the voters promise to vote for P and the rest promised to vote for Q. Of these, on the last day 15% of the voters went back of their promise to vote for P and 25% of voters went back of their promise to vote for Q, and P lost by 2 votes. Then the total number of voters is

Type in the answer here: _____

3. A stockist wants to make some profit by selling sugar. He contemplates about various methods . Which of the following would maximise his profit?
I. Sell sugar at 10% profit.
II. Use 900 g of weight instead of 1 kg.
III. Mix 10% impurities in sugar and selling sugar at cost price.
IV. Increase the price by 5% and reduce weights by 5%.
a. I or III
b. II
c. II, III and IV
d. Profits are same

4. For the product n(n + 1)(2n + 1), n ∈ N, which one of the following is not necessarily true?
a. It is even
b. Divisible by 3
c. Divisible by the sum of the square of first n natural numbers
d. Never divisible by 237

5. ABCD is a square of area 4 with diagonals AC and BD, dividing square into 4 congruent triangles. Figure looks like four non-over lapping triangles. Then the sum of the perimeters of the triangles is
a. 8(2 + √2)
b. 8(1+ √2)
c. 4(1 + √2)
d. 4(2 + √2)
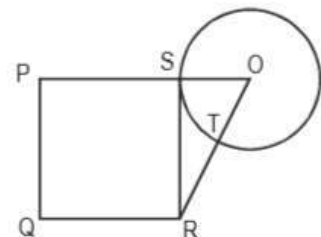
6. PQRS is a square. SR is a tangent (at point S) to the circle with centre O and TR = OS. Then the ratio of area of the circle to the area of the square is

a. π/3
b. 11/7
c. 3/π
d. 7/11

7. From a circular sheet of paper with a radius 20 cm, four circles of radius 5 cm each are cut out. What is the ratio of the uncut to the cut portion?
a. 1 : 3
b. 4 : 1
c. 3 : 1
d. 4 : 3

8. A wooden box (open at the top) of thickness 0.5 cm, length 21 cm, width 11 cm and height 6 cm is painted on the inside. The expenses of painting are Rs. 70. What is the rate of painting per square centimetres?
a. Re 0.7
b. Re 0.5
c. Re 0.1
d. Re 0.2

9. The cost of diamond varies directly as the square of its weight. Once, this diamond broke into four pieces with weights in the ratio 1 : 2 : 3 : 4. When the pieces were sold, the merchant got Rs. 70,000 less. Find the original price of the diamond.

Type in the answer here: ____

10.. The figure shows the rectangle ABCD with a semicircle and a circle inscribed inside in it as shown. What is the ratio of the area of the circle to that of the semicircle?
a. $(\sqrt{2} - 1)^2 : 1$
b. $2(\sqrt{2} - 1)^2 : 1$
c. $(\sqrt{2} - 1)^2 : 2$
d. None of these
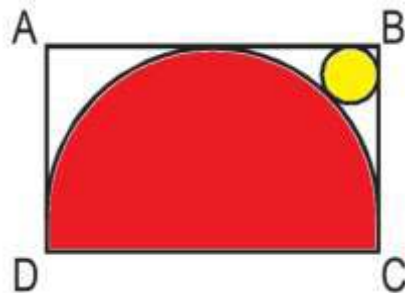
11.In a mile race, Akshay can be given a start of 128 m by Bhairav. If Bhairav can give Chinmay a start of 4 m in a 100 m dash, then who out of Akshay and Chinmay will win a race of one and half miles, and what will be the final lead given by the winner to the loser? (One mile is 1,600 m.)
a. Akshay, 1/12 mile
b. Chinmay, 1/32 mile
c. Akshay, 1/24 mile
d. Chinmay, 1/16 mile

12.Two liquids A and B are in the ratio 5 : 1 in container 1 and 1 : 3 in container 2. In what ratio should the contents of the two containers be mixed so as to obtain a mixture of A and B in the ratio 1 : 1?
a. 2 : 3
b. 4 : 3

c. 3 : 2
d. 3 : 4

13. If $x^2 + y^2 = 0.1$ and $|x - y| = 0.2$, then $|x| + |y|$ is equal to
a. 0.3
b. 0.4
c. 0.2
d. 0.6

14. ABCD is a rhombus with the diagonals AC and BD intersecting at the origin on the x-y plane. The equation of the straight line AD is x + y = 1. What is the equation of BC?
a. x + y = −1
b. x − y = −1
c. x + y = 1
d. None of these

15. The set of all positive integers is the union of two disjoint subsets: {f(1), f(2), ..., f(n), ...} and {g(1), g(2), ..., g(n), ...}, where f(1) < f(2) < ... < f(n) ..., and g(1) < g(2) < ... < g(n) ..., and g(n) = f(f(n)) + 1 for all n ≥ 1. What is the value of g(1)?
a. 0
b. 2
c. 1
d. Cannot be determined

16. For all non-negative integers x and y, f(x, y) is defined as below.
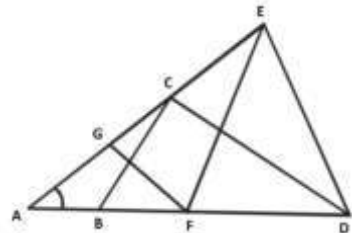f(0, y) = y + 1 f(x + 1, 0) = f(x, 1) f(x + 1, y + 1) = f(x, f(x + 1, y)).
Then what is the value of f(1, 2)?

Type in the answer here: ____

17.
In the figure above, AB = BC = CD = DE = EF = FG = GA.
Then ∠DAE is approximately
a. 15°
b. 20°
c. 30°
d. 25°

18. A water tank has three taps A, B, and C. A fills four buckets in 24 mins, B fills 8 buckets in 1 hour and C fills 2 buckets in 20 minutes. If all the taps are opened together a full tank is emptied in 2 hours. If a bucket can hold 5 litres of water, what is the capacity of the tank in litres?

Type in the answer here: ____

19. Shyam went from Delhi to Shimla via Chandigarh by car. The distance from Delhi to Chandigarh is ¾ times the distance from Chandigarh to Shimla. The average speed from Delhi to Chandigarh was half as much again as that from Chandigarh to Shimla. If the average speed for the entire journey was 49 kmph. What was the average speed from Chandigarh to Shimla?
(a) 39.2 kmph

CAT 2015 based paper

(b) 63 kmph
(c) 42 kmph
(d) None of these

20. Fourth term of an arithmetic progression is 8. What is the sum of the first 7 terms of the arithmetic progression?
(a) 7
(b) 64
(c) 56
(d) Cannot be determined

21. Two towns A and B are 100 km apart. A school is to be built for 100 students of town B and 30 students of Town A. Expenditure on transport is Rs. 1.20 per km per student. If the total expenditure on transport by all 130 students is to be as small as possible, then the school should be built at
(a) 33 km from Town A.
(b) 33 km from Town B
(c) Town A
(d) Town B

22. One man can do as much work in one day as a woman can do in 2 days. A child does one third the work in a day as a woman. If an estate-owner hires 39 pairs of hands, men, women and children in the ratio 6 : 5 : 2 and pays them in all Rs. 1113 at the end of the days work. What must the daily wages of a child be, if the wages are proportional to the amount of work done?
(a) Rs.14
(b) Rs.5
(c) Rs.20
(d) Rs.7

23. Let $u_{n+1} = 2u_n + 1(n=0,1,2,..)$ and $u_n = 0$. Then u_{10} nearest to

Type in the answer here: ____

24. Let x < 0.50, 0 < y < 1, z > 1. Given a set of numbers, the middle number, when they are arranged in ascending order, is called the median. So the median of the numbers x, y, and z would be
(a) less than one
(b) between 0 and 1
(c) greater than 1
(d) cannot say

25. The maximum possible value of $y = \min (1/2 - 3x^2/4, 5x^2/4)$ for the range 0 < x < 1 is
(a) 1/3
(b) 1/2
(c) 5/27
(d) 5/16

26. Let x < 0, 0 < y < 1, z > 1. Which of the following may be false?
(a) $(x^2 - z^2)$ has to be positive.
(b) yz can be less than one.
(c) xy can never be zero.
(d) $(y^2 - z^2)$ is always negative.

CAT 2015 based paper

27.A young girl counted in the following way on the fingers of her left hand. She started calling the thumb 1, the index finger 2, middle finger 3, ring finger 4, little finger 5, then reversed direction, calling the ring finger 6, middle finger 7, index finger 8, thumb 9, then back to the index finger for 10, middle finger for 11, and so on. She counted up to 1994. She ended on her.
(a) thumb
(b) index finger
(c) middle finger
(d) ring finger

28. Consider the set S = {1, 2, 3, . . ., 1000}. How many arithmetic progressions can be formed from the elements of S that start with 1 and end with 1000 and have at least 3 elements?
(1) 3
(2) 4
(3) 6
(4) 7

29. The number of solutions of the equation 2x + y = 40 where both x and y are positive integers and x ≤ y is:

Type in the answer here: _____

30. If $\log_y x = (a \cdot \log_z y) = (b \cdot \log_x z) = ab$, then which of the following pairs of values for (a, b) is not possible?
(1) (-2, 1/2)
(2) (1, 1)
(3) (π, 1/π)
(4) (2, 2)

31.When you reverse the digits of the number 13, the number increases by 18. How many other two digit numbers increase by 18 when their digits are reversed?

Type in the answer here: _____

32. Survey was conducted of 100 people to find out whether they had read recent issues of Golmal, a monthly magazine. The summarized information regarding readership in 3 months is given below: Only September: 18; September but not August: 23; September and July: 8; September: 28; July: 48; July and August: 10; None of the three months: 24.
What is the number of surveyed people who have read exactly two consecutive issues (out of the three)?
(1) 7
(2) 9
(3) 12
(4) 14

33. Amol was asked to calculate the arithmetic mean of 10 positive integers, each of which had 2 digits. By mistake, he interchanged the 2 digits, say a and b, in one of these 10 integers. As a result, his answer for the arithmetic mean was 1.8 more than what it should have been. Then b – a equals 1

Type in the answer here: _____

34.The angle of elevation of the top of a tower 30 m high, from two points on the level ground on its opposite sides are 45 degrees and 60 degrees. What is the distance between the two points?
(1) 30
(2) 51.96

CAT 2015 based paper

(3) 47.32
(4) 81.96

CAT 2015 based paper

Verbal

1. According to popular wisdom, language is a cultural artifact or cultural invention or it is part of the leaning process or it is unique to Homo sapiens. But option(4) has been stated as the viewpoint of the cognitive researchers as can be seen in the lines 'Language is a complex specialized......module'. The author also agrees with the cognitive researchers' view as he confirms to the view that language comes by instinct. He further corroborates this by saying that people know how to talk in the same manner as spiders know how to spin the web.

2. 2 "Spiders know how to spin webs" highlights the inherent qualities of living species. This analogy can be replaced in a similar way by "Bees collecting nectar" which is also a part of their inane trait. Options(1), (3), (4) mention traits which are acquired over a period of time by putting in some kind of effort in order to be adept at them.

3. 2 Refer to the last sentence of the 2nd paragraph of the passage. It states that 'In nature's talent show, we are simply a species of primate with our own act, a knack for communicating information about who did what to whom by modulating the sounds we make when we exhale'. Hence, communicating with each other through voice modulation is the unique quality of human beings as per the passage.

4. 1 Refer to the 3rd paragraph of the passage where the author says that the researchers believe that the complexity of language is part of our biological birthright. He further illustrates the researchers' point of view that it cannot be taught. The author strengthens this view by quoting Oscar Wilde, making option(1) as the correct answer option. The rest of the options are not mentioned in the passage.

5. 4 Throughout the passage, the author is talking about language as a type of instinct that is existent is human beings and not any specific attribute or skill that is learnt by them over a period of time. In the first paragraph, the author claims 'But I prefer the admittedly quaint term instinct'. Similarly in the last paragraph of the passage, the author concludes by saying that 'Finally, since language is the product of a well engineered biological instinct, we shall see that it is not the nutty barrel of monkeys that entertainer columnists make it out to be'.

6. 2. only option 2 is true. (2) Used as an analogy for healthy human beings.

7. b US was more concerned with 'order' than with reforms of any kind.
8. d Latin Americans regarded it as economic imperialism.
9. a The Act of Bogota was most closely related to the Marshall Plan or Latin America.
10. c US preferred dictatorship to the spread of communism in Latin America.
11. b The President's initiative to present financial economic aid to Latin America has been presented as an example of his efforts to mend his 'Latin Ameriacn fences'. Thus he was not acting to continue to keep communism from intruding the country.
12. a The passage states that speeding up social reforms implied a risk of revolt, which could be avoided by maintaining status quo.

13. b The diverse cultural and socio-economic factors are a major problem affecting the Indian education system. (a) (c) and (d) are not stated in the passage.
14. d 'Grizzled mandarins' refers to bureaucrats. It would be unfair to label the mandarins as (a), (b) or (c).
15. c Those in charge of education are totally out of touch with the ground reality. This point is given in the fourth paragraph. Hence, it will not be necessary to mark (a), (b) or (c) as the answer.

CAT 2015 based paper

16.a The author advocates decentralizing education planning and implementation to improve the education system. This point is given in the fourth paragraph. Hence, it will not be necessary to mark (b), (c) or (d) as the answer.

17.d None of the given statements can be related to primary education, on the basis of the passage.

18.a The author advocates greater community involvement for successful implementation of education policy. This point is given in the fourth paragraph. We are not sure about others.

19.4. None of the following options fits to be the main idea of the passage

20.3 In para number 2 "Each is torn …" and then further in para 3 "Internal …" These lines in paras 2 and 3 talk about external conflict being psychologically empty, and no psychological problems involved therein. This makes internal conflicts psychologically interesting.

21.2 In paragraph 4, refer to line 11, "Chess may be psychologically….. rationally." According to the author, only when someone acts irrationally will that act be considered psychologically interesting and out of the given choices only option (2) qualifies, wherein adopting a defensive strategy against an aggressive opponent will be irrational. Option (3) is incorrect as the choice that the mountaineer would make would depend on external conditions and there would not be any internal conflicts as such, and the decisions that he would need to make would have to be rational.

22.2 In the first paragraph refer to line 4- "Thus the "interests" of the players are generally in conflict." Choice (3) may also be correct but choice (2) is more appropriate as it is stated directly in the passage whereas choice (3) is an inference. Choice (1) is a consequence of applying game theory to a situation, not one of its pre-requisites, Therefore option 4 is also ruled out.

23.3 In paragraph 4 lines 3 onwards- "The effort… genuine" According to this, in case of the detective , if the criminal remains passive, there is no conflict, whereas the scientist has to unravel the secrets of nature (which is "passive") by deduction .

24.1. Its given in the last line of the 3rd paragraph and starting of 4th paragraph. Games like Tic-tac-toe is played in a perfectly rational manner is psychologically no more interesting than chess which is played not quite rationally.

25.This question asks you to choose the statement that best describes the Essence or structure of the passage. The first two sentences of the passage give you information about children and walking. In the third sentence, the author asserts that the idea of walking when the time is right should be applied to the activity of teaching children to read. The fourth sentence tells what might happen if the idea were applied. Choice A accurately describes the Essence of the paragraph.

26.B shows the problem faced by a researcher, D. elaborates why this happens, A continues with it and C., by using 'however' introduces the way out of the problem. BDAC is correct answer.

27.Options 1 and 3 are very generalized statements. Option 2 is a repetition of the idea presented in the beginning of the paragraph. The para talks about how developed countries indulge in trade protectionism as a move against China and India's economic rise , under the guise of climate concern. Option 4 and 5 talk about the same thing but 4 goes along with the subtle suggestive tone of the para while 5 is more curt in its accusation of 'perpetrators of inequity'. Correct answer is 4.

28.The best answer for this question is D. Several pieces of explicitly stated information point to D as the best answer. The first sentence of the passage states that, in one respect, local property taxes "are superior to" state taxes as a way of financing public schools. The second sentence states what this superiority or advantage is in helping schools to avoid competition for funding. The third and fourth sentences tell more about this advantage.

29.In the paragraph the author suggests why the doctor loses some of his patients. Option 5 can be easily eliminated as the pronoun "these" has no antecedent in the para. Option 3 & 4 are farfetched as they are to do with the doctor's attitude towards the problem, which the para does not indicate in any way. Option 1 can also be done away with as it suggests those patients who fail to speak up and not about those who leave his treatment, as indicated in the para. Option 2 fits in perfectly as it speaks of those who have no other alternative but to seek his treatment. Correct answer is 2.

30.The user of word 'rather' in B. indicates that it should follow 1. D. states that the competition depends on five basic competitive forces, A. continues with the same idea. C. states that not all industries have the same potential this is elaborated in 6. Correct answer is BDAC.

31.This question asks you to identify the essence in writing the whole passage. The author does not plainly state the essence; the essence must be determined on the basis of the information in the passage and how that information is organized. The first two sentences classify Shakespeare's plays into four categories and offer an explanation, endorsed by "some scholars." Note that up to this point in the passage, you know only that the author is concerned about the kinds of plays Shakespeare wrote and with explaining why he may have written them when he did. The word "But" in the sixth sentence of the passage informs you that the passage is about to change direction. The author states that there is evidence to suggest that the first explanation may be wrong. The ESSENCE of the passage, then, is not simply to describe the kinds of plays Shakespeare wrote, but rather to refute the explanation attributed to "some scholars" by providing evidence to suggest it may not be true. This purpose is described in choice B.

32.ADB is a clear sequence. So is CE. A has a suitable opening with A few months ago. The invitation and the response follow in DB. She in E has a clear reference to One senior in C. Correct answer is ADBCE.

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33.The para is a description of the Jewry settlement,. (4) can be eliminated as it brings in a hint of skepticism. (3) is a mere repetition of an idea already discussed in the para (that of jews being tolerant). (5) can also be eliminated as it is brings an alien concept – that of Mattancherry's popularity with the tourists . Between (1) and (2), we will eliminate (1) as it has a more conclusive tone, which is not in sync with the descriptive nature of the paragraph. Correct answer is 2.

34.CA gives the sequence of action. BD follows with reaction. The outcome is in E. CA outlines the consecutive bids. BD gives Mr. Shah's statements. Moreover in D adds to B. Correct answer is CABDE.

CAT 2015 based paper

DILR

1. 2 In 1999, total number of Naya mixer-grinder = 124 Number of Naya mixer-grinder disposed = 20% of 30 = 6 Number of mixtures bought 124 = [50 + 24] 50
2. 3 Number of Naya mixer-grinder disposed in 1999 ⇒ 6 Number of Naya mixer-grinder disposed in 2000 ⇒ 10 Total disposed by end of 2000 = 16
3. 4 Initial number of Purana mixer-grinder not available, hence cannot be determined.
4. 1 20 Purana mixer-grinder were purchased in 1999.

5.   4 Thailand and Japan (Maximum difference of 4 ranks (5 − 1) = 4)
6.   1 China (Maximum difference between 2 parameter is 2)
7. 2 Japan (Maximum difference of 4)
8. 4 Japan and Malaysia (Inferring from question 17)

9. 2 Only R9
10. 4 Statement (1) is not satisfied by R9. Statement (2) is not satisfied R2 & R3 Statement (3) is incorrect as there are five such region R1, R2, R3, R4 & R11. Statement (4) is correct.
11. 3 All three R9, R10, R11.
12. R1 and R4 are two common in crop 1 and crop3

The given basic information can be collated as below: (i) Six teams – A, B, C, D, E, F (ii) Matches scheduled in two stages – I & II. (ii) No team plays against the same team more than once. (iv) No ties permitted. As per the instructions given for stage – I, we can reach the following conclusions: (a) As B lost at least one match, hence A won all the 3 matches. (b) The two teams who lost all the matches cannot be A (as explained above), cannot be B (E lost to B), cannot be D (D won against C & F). Hence, the two teams must be C and F. (c) F did not play against the top team (i.e. A). We get the following table for stage – I.
(To be read from rows)

	A	B	C	D	E	F
A	X	W	W	W		
B	L	X			W	W
C	L		X	L	L	
D			W	X		W
E		L	W		X	X
F		L		L	L	X

As per the instructions given for Stage-II, we can reach the following conclusions. (d) A lost both its matches against E and F. (e) F won against A, hence is the bottom team (out of C & F) which won both the matches ⇒ F won against C as well. This also means that C lost both its matches against B and F. (f) Apart from A and C, one more team lost both the matches in Stage-II. That team can neither be E (A lost to E), nor B (as C lost to B), nor F (as F won both its matches). Hence, the team must be D.
We get the following table for Stage-II.

	A	B	C	D	E	F
A	X				L	L
B		X	W	W		
C		L	X			L
D		L		X	L	
E	W			W	X	

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F	W		W			X

13.2 E & F defeated A. [Please note that in this question option (1) and (5) were the same]

14.4 B, E & F won both the matches in Stage-II.

15.5 D & F won exactly two matches in the event.

16.5 B & E has most wins, 4 each.

17.3

	Day 1	Day 2	Day 3	Day 4	Day 5
Start price	100	90	100	110	120
End price	90	100	110	120	110

In the above table Harshit sold shares on Day 2, Day 3 and Day 4 whereas Dhara sold shares on Day 4 only. Therefore at the end of day 3 the price of Share is Rs. 110.

18.2

	Day 1	Day 2	Day 3	Day 4	Day 5
Start price	100	90	100	110	100
End price	90	100	110	100	100

Let initial amount with Harshit and Dhara is y. Total Money with Harshit = y - 900 + 1000 + 1100 + 1200 - 1100 = y + 1300 Total money with Dhara = y Therefore Harshit ended up with Rs.1300 more cash than Dhara. Therefore at the end of day 4 the price of Share is Rs. 100.

19.1

	Day 1	Day 2	Day 3	Day 4	Day 5
Start price	100	90	80	90	100
End price	90	80	90	100	110

Assume initial number of share with Harshit and Dhara is x. In the above table Harshit buy 10 share each on day 1, day 2 and sold 10 share on day 3, day 4 and day 5.

∴ Total shares with Harshit is x - 10. In the above table Dhara buy shares only on day 2. ∴ Total shares with Dhara is x + 10. ∴ Dhara had 20 shares more then Harshit. Therefore at the end of day 3 the price of share is Rs. 90.

20.4

	Day 1	Day 2	Day 3	Day 4	Day 5
Start price	100	110	120	130	120
End price	110	120	130	120	110

Let initial amount with Harshit and Dhara is Y. Harshit sold shares on Day 1, Day 2, Day 3 whereas buys shares on Day 4 and Day 5. Total Money with Harshit is = Y + 110 × 10 + 120 × 10 + 130 × 10 - 120 × 10 - 110 × 10 = Y + 1300 Total money with Dhara = Y + 1200 Total money with Dhara = Y + 120 × 10 + 130 × 10 + 120 × 10 = Y + 3700 Total money with Dhara & Harshit = 2Y + 5000. Therefore maximum possible increase is 5000.

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As only Paul Zohos was having an Zohos number of zero so the minimum Zohos number among A, B, C, D, E, F, G, H should be 1 or greater than one. At the end of the third day F coauthored a paper with A and C. F had the minimum Zohos number among the 8 people. So if F's Zohos number is y, then A and C's Zohos number should change to $(y + 1)$ after third day. As A and C decreased the average by maximum possible extent, it means C had the second-height Zohos number among all eight, as A had an Zohos number of infinity. Suppose Zohos numbers of A, B, C, D, E, F, G, H are $y + 1$, b, $y + 1$, c, d, e, y, g, h respectively at the end of third day.

$\therefore (y + 1 + b + y + 1 + c + d + e + y + g + h) = 24 = (3 \times 8)$ $3y + 2 + b + d + e + g + h = 24$

When E co-authored with F, the average Zohos number reduced again, it means, E's Zohos number was not the same with A & C initially. As at the end of third day, 5 people had same Zohos number, they should be A, C and any 3 out of B, D, G, H. Suppose those 3 people are B, D, G. Then

$(3y + 2 + y + 1 + y + 1 + y + 1 + e + h) = 24$ $6y + h + e = 19$ ...(i)

On the fifth day E co-authored a paper with F and hence Zohos number of E changed to $(y + 1)$. Also the average decreased by 0.5 that means the total decreased by

Hence, $e - (y + 1) = 4 \Rightarrow e - y = 5$

Putting the value of e in equation (i), we get $6y + h + (5 + y) = 19$ $7y + h = 14$

Only possible value of $y = 1$ as h cannot be zero. So after 3rd round Zohos number of A, C, E, F were 2, 2, 6, 1 respectively.

21.4 Only A, C, E changed their Zohos number, rest 5 did not change their Zohos number.
22.2 At the end of conference 6 people including E were having an Zohos number of 2 and F was having 1 as Zohos number. So 8th person was having an Zohos number of $[20 - (2 \times 6 + 1)] = 7$
23.2 As at the end of 3rd round 5 people were having same Zohos number. A and C changed their Zohos number after coauthoring with F. So, the other 3 would have same Zohos number in the beginning.
24.2 2

Player	Pakistan	South Africa	Australia
Yuvraj	40	<49	87
Virender	130	<49	<48
Kaif	28	51	<48
Saurav	<22	75	50
Rahul	<22	49	55
Top 3	198	175	192
Total	220	250	240

25. 3
26. 1
27. 2
28. 2

29.2 Since Ramaya got calls from all colleges, she has to score marks in each section equal to at least the maximum of the cut-offs across colleges which means 45, 45, 46 & 45 in section A, B, C & D respectively. This makes her total to be 181 with which she will clear the overall cut-offs of all institutes also.

30.3 Since we have to minimise the marks in a particular section, we will maximise the marks in other 3 sections. Let us assume that marks obtained in each of the three sections in which we are

going to maximize the score, is equal to 50. Now, the lowest overall cut-off is 171 & second lowest is 175. Hence Gauri must have scored at least 175 – (50 + 50 + 50) = 25 marks in the remaining section. Lets confirm whether he can clear sectional cut-offs also with such a distribution. On seeing the sectional cut-offs, we conclude what they can be cleared with 50 marks each in section A, B & C and 25 marks in section D, which may enable Charlie to clear the sectional cut-off of section D for college 1, 2, 3 or 5. Hence answer is 25.

31.3 Since we have to maximize Minakshi's marks, let us take the base values of 50 marks in each section and try to reduce that by minimum values to ensure he doesn't get any call. We notice that by reducing the marks

32. 3 Maximum marks needed by Cetking student to clear all colleges cut-off will be 46 marks as thats the highest cutoff for section D more than any college.

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1. d Let us assume that he has Rs. 100. In this he can buy 50 oranges or 40 mangoes. In other words, the price of an orange is Rs. 2 and that of a mango is Rs. 2.50. Now if he decides to keep 10% of his money for taxi fares, he would be left with Rs. 90. Now if he buys 20 mangoes, he would spend Rs. 50 and will be left with Rs. 40, in which he can buy 20 oranges.

2. a Let there be 100 voters in all. So initially there were 40 of these who promised to vote for P, while 60 of them promised to vote for Q. On the last day, (15% of 40) = 6 voters shifted their interest from P to Q and (25% of 60) = 15 voters shifted their interest from Q to P. So finally, P would end up getting (40 – 6 + 15) = 49 votes and Q would end up getting (60 – 15 + 6) = 51 votes. Hence, margin of victory for Q = (51 – 49) = 2, which matches the data given in the question. Hence, there were 100 voters in all.

3. b Profit percentage in each case is
 (i) 10%
(ii) (100 × 100)/ 900 = 100/9%
(iii) (100 - 100 / 1.1) / (100/1.1) = 10%
(iv) (100 x 100) / 9 = 200/19%

4. d Since n(n + 1) forms two consecutive integers, one of them will be even and hence the product will always be even. Also the sum of the squares of first n natural numbers is given by n(n+1)(2n+1)/6. Hence, our product will always be divisible by this. Also you will find that the product is always divisible by 3 (you can use any value of n to verify this). However, we can find that the option (d) is not necessarily true. Only under certain situation does it hold good. e.g. if n = 118, (2n + 1) = 237 or if n = 236, then (n + 1) = 237 or if n itself is 237, etc.

5. The sum of the perimeters of the triangles = (Perimetes of the square) + 2 × (Sum of its diagonals). This is so because the bases of each triangle will be counted once. But since each of the other two sides of the triangles is common to two triangles, it will be counted twice. Since area of the square = 4, its side = 2 and perimeter = 8. Also its diagonal = 2√2. So the required perimeter = (8 + 2 × 4√2) = 8(1 + √2).

6. a In the given figure, the area of the circle = πr^2. To find the area of the circle, we need to find the length of the side of the square. We know that OR = OT + TR = OT + OS = 2r. So in the right-angled triangle ORS, we have OR = 2r, OS = r. So $SR^2 = OR^2 – OS^2$. But SR2 = Area of the square = $4r^2 – r^2 = 3r^2$. So the required ratio = $\pi/3$.

7. Area of the original paper = π(20)2 = 400π cm2. The total cut portion area = 4(π)(5)2 = 100π cm2 . Therefore, area of the uncut (shaded) portion = (400 – 100) = 300π cm2. Hence, the required ratio = 300π : 100π = 3 : 1.

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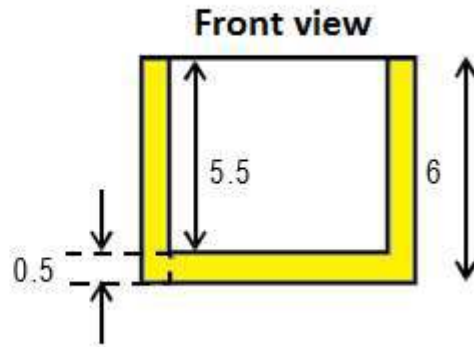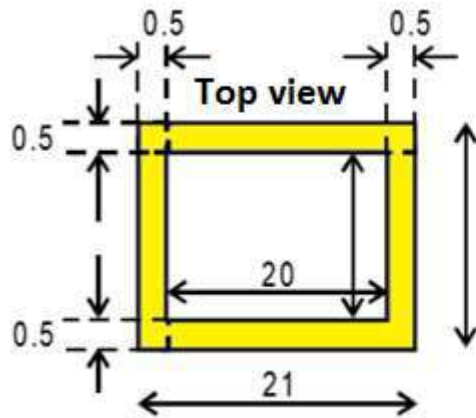
8. As it can be seen from the diagram, because of the thickness of the wall, the dimensions of the inside of the box is as follows: length = (21 − 0.5 − 0.5) = 20 cm, width = (11 − 0.5 − 0.5) = 10 cm and height = (6 − 0.5) = 5.5. Total number of faces to be painted = 4 walls + one base (as it is open from the top). The dimensions of two of the walls = (10 × 5.5), that of the remaining two walls = (20 × 5.5) and that of the base = (20 × 10). So the total area to be painted = 2 × (10 × 5.5) + 2 × (20 × 5.5) + (20 × 10) = 530 cm2. Since the total expense of painting this area is Rs. 70, the rate of painting = 70/530 = 0.13 = Re 0.1 per sq. cm.

9. c Let the original weight of the diamond be 10x. Hence, its original price will be k(100x^2) . . . where k is a constant. The weights of the pieces after breaking are x, 2x, 3x and 4x. Therefore, their prices will be kx^2, 4kx^2, 9kx^2 and 16kx^2. So the total price of the pieces = (1 + 4 + 9 + 16)kx^2 = 30kx^2. Hence, the difference in the price of the original diamond and its pieces = 100kx^2 − 30kx^2 = 70kx^2 = 70000. Hence, kx^2 = 1000 and the original price = 100kx^2 = 100 × 1000 = 100000 = Rs. 1 lakh.

10. Let radius of the semicircle be R and radius of the circle be r. Let P be the centre of semicircle and Q be the centre of the circle. Draw QS parallel to BC. Now, ΔΔ PQS ~ PBC
∴= PQ / PB = QS/ BC
⇒(R+ r) / √2R = (R − r) /R
⇒ R + r = √2R - √2r
⇒ r(1 + √2)= R(√2 - 1)
⇒ r = R (√2 - 1) / (√2 + 1) x (√2 - 1) / (√2 - 1)
⇒ r = R (√2 - 1)^2
Required Ratio = πr^2 / πR^2 X 2
= πR^2 (√2 - 1)^4/ πR^2 X 2
=2(√2 - 1) ^{4} : 1

11.. d In a mile race, Akshay can be given a start of 128 m by Bhairav. This means that Bhairav can afford to start after Akshay has travelled 128 m and still complete one mile with him. In other words, Bhairav can travel one mile, i.e. 1,600 m in the same time as Akshay can travel (1600 − 128) = 1,472 m. Hence, the ratio of the speeds of Bhairav and Akshay = Ratio of the distances travelled by them in the same time = 1900/1472 = 25 : 23. Bhairav can give Chinmay a start of 4 miles. This means that in the time Bhairav runs 100 m, Chinmay only runs 96 m. So the ratio of the speeds of Bhairav and Chinmay = 100/96 = 25 : 24. Hence, we have B : A = 25 : 23 and B : C = 25 : 24. So A : B : C = 23 : 25 : 24. This means that in the time Chinmay covers 24 m, Akshay only covers 23 m. In other words, Chinmay is faster than Akshay. So if they race for 1 ½ miles = 2,400 m, Chinmay will complete

the race first and by this time Aksahy would only complete 2,300 m. In other words, Chinmay would beat Akshay by 100 m = 1/ 16 mile.

12.d We can solve this by alligation. But while we alligate, we have to be careful that it has to be done with respect to any one of the two liquids, viz. either A or B. We can verify that in both cases, we get the same result. e.g. the proportion of A in the first vessel is 5/6 and that in the second vessel is 1/4, and we finally require ½ parts of A. Similarly, the proportion of B in the first vessel is 1/6 that in the second vessel is 3/4 and finally we want it to be 1/2. With respect to liquid A.
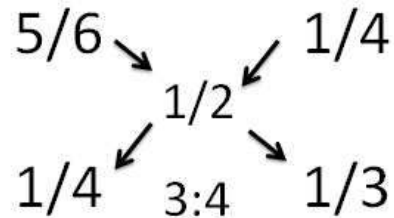
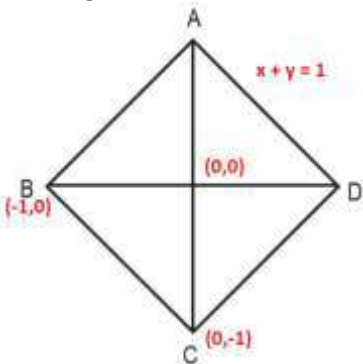13.b $x^2 + y^2 = 0.1$
$|x − y|^2 = x^2 + y^2 − 2xy$
$(0.2)^2 = 0.1 − 2xy$ or $2xy = 0.06$ or $xy = 0.03$
Now $|x| + |y| = \sqrt{(x^2 + y^2 − 2xy)} = \sqrt{(0.1 + 0.06)}$
$|x| + |y| = 0.40$
Hence, x = 0.3, y = 0.1 or vice versa.

14.The gradient of the line AD is −1. Coordinates of B are (− 1, 0). Equation of line BC is x + y = −1.

15.b g(1) = f[f(1)] + 1 = 2 . Since f(1) has to be 1, else all the integers will not be covered. f(n) is the set of odd numbers and g(n) is the set of even numbers.

16.b f(1, 2) = f(0, f(1, 1)); Now f(1, 1) = f[0, f(1, 0)] = f[0, f(0, 1)] = f[0, 2] = 3 Hence, f(1, 2) = f(0, 3) = 4

17.Let ∠EAD = a. Then ∠AFG = a and also ∠ACB = a. Therefore, ∠CBD = 2a (exterior angle to ΔABC). Also ∠CDB = 2a (since CB = CD). Further, ∠FGC = 2a (exterior angle to ΔAFG). Since GF = EF, ∠FEG = 2a. Now ∠DCE = ∠DEC = b (say). Then ∠DEF = b − 2a. Note that ∠DCB = 180 − (a + b). Therefore, in ΔDCB, 180 − (a + b) + 2a + 2a = 180 or b = 3a. Further ∠EFD = ∠EDF = γ (say). Then ∠EDC = γ − 2a. If CD and EF meet at P, then ∠FPD = 180 − 5a (because b = 3a). Now in ΔPFD, 180 − 5a + γ + 2a = 180 or γ = 3a. Therefore, in ΔEFD, a + 2γ = 180 or a + 6a = 180 or a = 26 or approximately 25.

CAT 2015 based paper
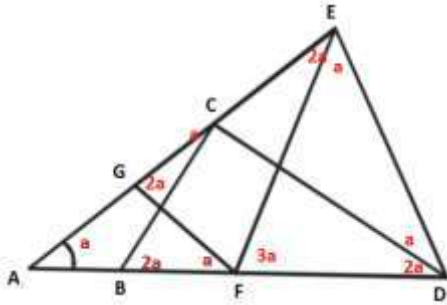
18.b Since a bucket holds 5 litres of water, Tap A discharges 20 litres of water in 24 min or 5/6 litres of water in 1 minute. Tap B discharges 40 litres in 1 hours or 2/3 litres in 1 minute. Tap C discharges 10 litres in 20 min. or ½ litres in 1 minute If A, B & C are all opened simultaneously, total discharge = (5/6 + 2/3 + ½) = 2 litres in 1 minute. So in 2 hours, the discharge would be 240 litres, which should be the capacity of the tank.

19.c It is clear that the ratio of the distances between (Delhi-Chandigarh) : (Chandigarh-Shimla) = 3 : 4. The ratio of the speeds between (Delhi-Chandigarh) : (Chandigarh-Shimla) = 3 : 2. Let the distances be 3x & 4x respectively and speeds be 3y and 2y. So the time taken will be (x/y) and (2x/y) respectively. Since average speed is given as (Total Distance) / (Total Time) = (7x)/(x/y + 2x/y) = 7y/3 = 49. Hence y = 21. So the average speed from Chandigarh to Shimla = 2y = 42 kmph.

20.c HINT : Students please note that you need not apply any formula in this case. The middle term of an AP is always the average of all the terms. Hence, if we multiply the middle term by the number of terms, we should get the sum of all the terms of that AP. In our problem, we have to find the sum of first 7 terms and we have been given the 4th term (which is the middle term). Hence the required answer is 8 x 7 = 56.

21.d

Option	Location	Expenditure of Town A students	Expenditure of Town B students	Total Expenditure
(a)	33 km from A	33x1.2x30 = 1188	67x1.2x100 = 8040	1188+8040 = 9228
(b)	33 km from B	67x1.2x30= 2412	33x1.2x100 = 3960	2412+3960 = 6372
(c)	Town A	0	100x100x1.2 = 12000 12000	12000
(d)	Town B	30x100x1.2 = 3600	0	3600

Hence we find that the least expenditure will be incurred if the school is located in town B. HINT : Students please note that since there are more number of students from Town B, to minimise the total expenditure the school should be located as closer to town B as possible.
Ganashakti

22.d It is clear that since there are 39 people in the ratio 6 : 5 : 2, there are 18 men, 15 women and 6 children. Ratio of the work done by a man : woman = 2 : 1. The ratio of the work done by a woman : child = 3 : 1. Hence the ratio of work done in a day by a man : a woman : a child = 6 : 3 : 1. So the ratio of the work done in a day by 18 men, 15 women and 6 children would be (18x6) : (15x3) : (6x1) = 108:45:6. Hence the daily wage of Rs.1113 should be divided in this ratio. That makes it, Rs.756 for

CAT 2015 based paper

men, 315 for women and Rs.42 for children. Hence 6 children earn Rs.42 in a day. So the daily wage of a child should be equal to 42/6 = Rs.7

23.a $U_0 = 2^0 - 1 = 0$
$U_1 = 2^1 - 1 = 1$
$U_2 = 2^2 - 1 = 3$
$U_3 = 2^3 - 1 = 7$ and so on.
$\therefore U_{10} = 2^{10} - 1 = 1023$.

24.b Since there are two numbers which are < 1 (viz. x & y), it is obvious that the median will be less than 1. Hence (c) cannot be the answer. Since x < 0.5 and 0 < y < 1, the median will not be < 0. Hence the answer is (b) between 0 and 1.

25.d Since, $0 < x < 1$, so $0 < x^2 < 1$ or $0 < 5x^2 < 5$. Similarly, as $0 < x < 1$, so $0 < x2 < 1$ or $0 < 3x^2/4 < 3/4$ or $0 > -3x^2/4 > -3/4$ or $\frac{1}{2} > (\frac{1}{2} - 3x^2/4) > \frac{1}{2} - \frac{3}{4}$ i.e. $\frac{1}{2} > 5x^2 > -\frac{1}{4}$. So, we can see that $5x^2$ varies between 0 & 5, while $\frac{1}{2} - 3x^2/4$ varies between $\frac{1}{2}$ & $-1/4$. Hence there is a common zone of 0 to $\frac{1}{2}$ between the two. Let us check for some key values of x. If x = 0, then $(\frac{1}{2} - 3x^2/4) > 5x^2/4$. If x = 1, then $(1/2 - 3x^2/4) < 5x^2/4$. Hence between x = 0 & x = 1, there has to be some value of x for which $(\frac{1}{2} - 3x^2/4) = 5x^2/4$, and this will be the maximum value of the given expression. Let us check for the same. If $(\frac{1}{2} - 3x^2/4) = 5x^2/4$, then $2x^2 = \frac{1}{2}$. Or $x^2 = 1/4$. For Or $x^2 = 1/4$, the value of $5x^2/4 = 5/16 = (\frac{1}{2} - 3x^2/4)$.

26.a Let us evaluate each option. (b) since $0 < y < 1$ and $z > 1$, yz will always be < 1. (c) Since both x & y are not equal to 0, xy will never be 0. (d) y is a positive number < 1 and z is a positive number > 1, hence $(y^2 - z^2)$ is always negative. Since, (b), (c) and (d) are always true, the answer has to be (a). And this can be verified. For eg. If x = -2 and z = 3, then $(x^2 - z^2) = 4 - 9 = -5$, not a positive number.

27.b If you were to run two of three cycles of how she is counting, you will observe that the number that she counts on thumb are 1, 9, 17, 25 and so on. So it forms a pattern such that all the numbers that are 1 more than the multiples of 8 are counted on thumb. The closest multiple of 8 near 1994 is 1992. In other words she would count 1993 on thumb. So she would count 1994 on the index finger.

28.4 Let number of elements in progression be n, then 1000 = 1 + (n-1) d
$\Rightarrow$ (n-1) d = 999 = 3^3 x 37
Possible values of d = 3, 37, 9, 111, 27, 333, 999 Hence 7 progressions.

29.2 2x + y = 40 x ≤ y $\Rightarrow$ y = 40 − 2x Values of x and y that satisfy the equation

X	Y
1	38
2	36
3	34
4	32
5	30
6	28
7	26
8	24
9	22
10	20
11	18

12	16
13	14

∴ 13 values of (x, y) satisfy the equation such that x ≤ y

30. 4
$\log_y x = (a \cdot \log_z y) = (b \cdot \log_x z) = ab$
$a = \log_y x / \log_z y$ and similarly $b = \log_y x / \log_x z$
$a \times b = \log_y x / \log_z y \times \log_y x / \log_x z = (\log_y x)^3$
$\Rightarrow ab - a^3 b^3 = 0$
Or, $a \times b (1 - a^2 b^2) = 0$
Ab = +- 1
Only option (4) does not satisfy. Hence (4).

31.2 Let the number be 10x + y so when number is reversed the number because 10y + x. So, the number increases by 18 Hence (10y + x) - (10x + y) = 9 (y - x) = 18 y - x = 2 So, the possible pairs of (x, y) is (3, 1) (4, 2) (5, 3) (6, 4), (7, 5) (8, 6) (9, 7) But we want the number other than 13 so, there are 6 possible numbers are there i.e. 24, 35, 46, 57, 68, 79. So total possible numbers are 6.

32.So, total people reading the newspaper in consecutive months i.e. July and August and August and Sept. is 2 + 7 = 9 people.

33.2 Arithmetic mean is more by 1.8 means sum is more by 18. So ba – ab = 18 b > a because sum has gone up, e.g. 31 – 13 = 18 Hence, b – a = 2

34.Let OT be te tower.
Therefore, Height of tower = OT = 30 m
Let A and B be the two points on the level ground on the opposite side of tower OT.
Then, angle of elevation from A = ∠TAO = 45o
and angle of elevation from B = ∠TBO = 60o
Distance between AB = AO + OB = x + y (say)
Now, in right triangle ATO,
tan 45o = OT/AO = 30/x
=> x = 30/tan45 = 30 m
and in right traingle BTO
tan 60o =OT/OB = 30/y
=> y = 30/tan60 = 30/√3 = 30√3 / 3 = 17.32 m

Hence, the required distance = x + y = 30 + 17.32 = 47.32 m