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MAT 2019 Question Paper

Management Aptitude Test conducted by AIMA

MANAGEMENT APTITUDE TEST (MAT)

Held on : February 2019

Time : 2.5 hrs **(BASED ON MEMORY)** *Maximum Marks : 200*

SECTION-A : English Language

DIRECTIONS (Qs. 1 - 3) : *In the following questions out of the four alternatives, choose the one which best expresses the meaning of the given word.*

1. Cantankerous
   (a) Cancerous (b) Ferocious
   (c) Quarrelsome (d) Fissiparous
2. Derision
   (a) Humiliation (b) Embarrassment
   (c) Ridicule (d) Condemnation
3. Trite
   (a) Commonplace (b) Clever
   (c) Brief (d) Impudent

DIRECTIONS (Qs. 4- 6): *In the following questions, choose the word opposite in meaning to the given word.*

4. Knack :
   (a) Talent (b) Dullness
   (c) Dexterity (d) Balance
5. Pernicious :
   (a) Prolonged (b) Ruinous
   (c) Ruthless (d) Beneficial
6. Opulence :
   (a) Luxury (b) Transparency
   (c) Weath (d) Poverty

DIRECTIONS (Qs. 7 - 8): *In the following questions, four alternatives are given for the Idiom / Phrase underlined in the sentence. Choose the alternative which best expresses the meaning of the Idiom/Phrase.*

7. The manager hesitated to assign the job to the newcomer as he was wet behind the ears.
   (a) stupid and slow-witted
   (b) young and inexperienced
   (c) drenched-in the rain .
   (d) unpunctual and lethargic
8. Mrs. Roy keeps an open house on Saturday evening parties— you'll find all kinds of people there.
   (a) keeps the doors of the house open
   (b) keeps the gates open for a few persons
   (c) welcomes all members
   (d) welcomes a select group of people

DIRECTIONS (Qs. 9 - 12): *Read each sentence to find out whether there is any grammatical error in it. The error if any, will be in one part of the sentence, the letter of that part is the answer. (Ignore errors of punctuation, if any)*

9. In the first two months of this fiscal, tractor sales has seen (a)/a drop of about five percent (b)/ however, the industry is waiting for the monsoon (c)/ to really arrive at a firm conclusion about growth prospects for the current year. (d)
10. Dolphins are truly out of the ordinary because of their intelligence. (a) / And among the many creatures that share the earth form (b)/they come closest to humankind in terms of (c)/familial traits, emotions and learning. (d)
11. Corruption indulged in by the high and mighty adversely impacts (a)/ our nation and in the coming months (b) / we may see revival of efforts (c)/ to tackle such large scale corruption. (d)
12. It is notable and welcome that the ministry of (a)/ environmental and forests is to issue approvals online (b)/ in a time bound manner, with clear timelines (c)/in place for the various sub-steps along the way. (d)

DIRECTIONS (Qs. 13 - 17): *Below, in each questions, some sentences are given; find the sentence which is not really contributing to the main theme and the of the passage or find the odd sentence out and rearrange the remaining sentences to make a coherent paragraph. If the given sentence is correct as it is then choose option (d).*

13. (A) keep their inner life (B)/ Tightly under control (C)/ Educational institutions seldom serve as precise mirrors (D)/Of historical change because pedagogic and administrative rituals (E)/ That have nicely preserved an empty shell of a special inherited identity
   (a) CEDB (b) CDEB
   (c) CDAB (d) No correction required
14. (A) Most importantly the labour market'(B)/We can expect to see continued spillovers (C)/Into other areas of the economy, (D)/Combined with a 'broader unravelling of credit markets, (E)Parliament should act quickly to keep the economy from stalling
   (a) DECA (b) DEAC
   (c) ECBD (d) No correction required
15. (A) And act judiciously to bring the economy back on track(B)/The start-up ecosystem cannot progress in a disturbed business cycle(C)/The economy appears to be in a shambles(D)/ Leaders in the government are failing to

recognise the pessimism(E)/ And despite the gloomy forecasts for the future,

(a) DAEB (b) BEDA
(c) CEDA (d) No correction required

16. (A) Even at the risk of reducing an appraisal(B)/ It strove to make this evident, (C)/Of a great writer such as Ishiguro to a trite high school essay (D)/While announcing the name, (E)/ That came its way last year

(a) DBAC (b) ACBE
(c) DCBE (d) No correction required

17. (A) But laws do have the utility value (B) To heed the line between religious traditions and superstitious practices (C) Of curbing the prevalence of inhuman rituals and practices (D) To eradicate superstition from society,(E) Mere legislation is not enough

(a) EBAC (b) DEBA
(c) EDAC (d) No correction required

DIRECTIONS (Qs. 18 - 20): *In the following passage there are blanks, each of which has been numbered. These numbers are printed below the passage and against each, three phrases are suggested. Choose the phrase that best fits the blank appropriately and contextually. If no phrase fits the blank then choose (d) i.e. 'None of the above' as your answer.*

Saudi Arabia's furious response to Canada's criticism of the arrest of rights activists in the Kingdom **(18)** question Crown Prince Mohammed bin Salman's professed commitment to reform. Having ascended last June to be second in line to the throne, he had promised progressive economic and political change. Since then, Saudi Arabia has allowed women to drive, cracked down on hardliners among the clergy and projected itself as a moderate Islamic country that respects people's rights, compared to "extremist Iran". But when Canadian Foreign Minister Chrystia Freeland **(19)** release of Samar Badawi, a Saudi women's rights activist who was detained last week, and her brother Raif Badawi, Riyadh took a series of unilateral steps. Terming Ms. Freeland's appeal as interference in its domestic affairs, it expelled the Canadian Ambassador, called back its envoy from Ottawa, froze trade with Canada and said it would transfer out some 12,000 Saudi citizens studying in Canadian universities. Ms. Badawi **(20)** Saudi Arabia's guardianship laws that require all Saudi women to have a male guardian.

18. (a) once again calls for
(b) yet again deterred into
(c) one again calls into
(d) None of the above

19. (a) called for the (b) request for the
(c) ordered for the (d) None of the above

20. (a) had long campaigning against
(b) has long campaigning for
(c) has long campaigned against
(d) None of the above

DIRECTIONS (Qs. 21-25): *Read the following passage carefully and answer the questions given below it.*

Financial Inclusion (FI) is an emerging priority for banks that have nowhere else to go to achieve business growth. The viability of FI business is under question, because while banks and their deliver partners continue to make investments, they haven't seen commensurate returns. In markets like India, most programs are focused on customer on-boarding, an expensive process which people often find difficult to afford, involving issuance of smart cards to the customers. However, large scale customer acquisition hasn't translated into large scale business, with many accounts lying dormant and therefore yielding no return on the bank's investment. For the same reason, Business Correspondent Agents who constitute the primary channel for financial inclusion are unable to pursue their activity as a full-time job. One major reason for this state of events is that the customer on-boarding process is often delayed after the submission of documents (required to validate the details of the concerned applicant) by the applicant and might take as long as two weeks. By this time the initial enthusiasm of applicants fades away. Moreover, the delivery partners don't have the knowledge and skill to propose anything other than the most basic financial products to the customer and hence do not serve their banks' goal of expanding the offering in unbanked markets.

Contrary to popular perception, the inclusion segment is not a singular impoverished, undifferentiated mass and it is important to navigate its diversity to identify the right target customers for various programs. Rural markets do have their share of rich people who do not use banking services simply because they are incovenient to access or have low perceived value. At the same time, urban markets, despite a high branch density, have **multitude** of low wage earners outside the financial net. Moreover, the branch timings of banks rarely coincide with the off-work hours of the labour class.

Creating affordability is crucial in tapping the unbanked market. No doubt pricing is a tool, but banks also need to be innovative in right-sizing their proposition to convince customers that they can derive big value even from small amounts. One way of doing this is to show the target audience that a bank account is actually a lifestyle enabler, a convenient and safe means to send money - to - family or make a variety of purchases. Once banks succeed in hooking customers with this value proposition they must sustain their interest by introducing a simple and intuitive user application, unbiquitous access over mobile and other touch points, and adopting a banking mechanism which is not only secure but also reassuring to the customer. Technology is the most important element of financial inclusion strategy and an enabler of all other. The choice of technology is therefore a crucial decision, which could make or mar the agenda. Of the various selection criteria, cost is perhaps the most important. This certainly does not mean buying the cheapest package, but rather choosing that solution which by scaling transactions to huge volumes reduces per unit operating cost. An optimal mix of these strategies would no doubt offer an innovative means of expansion in the unbanked market.

21. Which of the following facts is true as per the passage?
    (a) People from rural areas have high perceived value of banking services.
    (b) Cost is not a valid criterion for technological package selection for financial inclusion initiatives
    (c) The inclusion segment is a singular impoverished, undifferentiated mass
    (d) The branch timings of banks generally do not coincide with the off-work hours of the labour class in urban markets
22. According to the passage, for which of the following reasons do the delivery partners fail to serve their bank's goal to expand in the unbanked markets?
    (A) They do not have adequate client base to sell their financial products
    (B) They do not have adequate knowledge and skills to explain anything beyond basic financial products to the customers.
    (C) They do not have the skills to operate advanced technological aids that are a prerequisite to tap the unbanked market.
    (a) Only (B) (b) Only (C)
    (c) All (A), (B) and (C) (d) Only (A)
23. According to the passage, for which of the following reasons is the viability of financial inclusion under question?
    (a) The banks always prefer the cheapest package (to cut cost) while making a choice of technology to be used
    (b) The Business Correspondent Agents are highly demotivated to pursue their activity as a full-time job
    (c) The investments made by banks and its delivery partners are not yielding equal amount of returns
    (d) The banks do not have adequate number of delivery partners required to tap the unbanked market
24. In the passage, the author has specified which of the following characteristics of the customer on-boarding process?
    (a) It involves collection of documents from the applicants in order to validate their details.
    (b) It involves issuance of smart cards to the customers
    (c) It suffers from latency as it takes a long time after submission of documents by the customer.
    (d) All of the given characteristics have been specified
25. What did the author try to highlight in the passage?
    (A) The ailing condition of financial inclusion business at present
    (B) Strategies that may help bank to expand in the unbanked market
    (C) Role of government in modifying the existing financial inclusion policies
    (a) Both (A) and (B) (b) All (A), (B) and (C)
    (c) Only (C) (d) Only (A)

DIRECTIONS (Qs. 26-30): *Read the following passage carefully and answer the questions given below it.*

The evolution of Bring Your Own Device (BYOD) trend has been as profound as it has been rapid. It represents the more visible sign that the boundaries between personal life and work life are blurring. The 9 am - 5 pm model of working solely from office has become archaic and increasingly people are working extended hours from a range of locations. At the vary heart of this evolution is the ability to access enterprise networks from anywhere and anytime. The concept of cloud computing serves effectively to extend the office out of office. The much heralded benefit of BYOD is greater productivity. However, recent research has suggested that this is the greatest myth of BYOD and the reality is that BYOD in practice poses new challenges that may outweigh the benefits. A worldwide survey commissioned by Fortinet chose to look at attitudes towards BYOD and security from the users's point of view instead of the IT managers. Specifically the survey was conducted in 15 territories on a group of graduate employees in their early twenties because they represent the first generation to enter the workplace with an expectation of own devide use. Moreover, they also represent tomorrow's influences and decision makers. The survey findings reveal that for financial organizations, the decision to embrace BYOD is extremely dangerous. Larger organizations will have mature IT strategies and policies in place. But what about smaller financial businesses? They might not have such well developed strategies to protect confidential data.

Crucially, within younger employee group, 55% of the people share an expectation that they should be allowed to use their own devices in the workplace or for work purposes. With this expectation comes the very real risk that employees may consider contravening company policy banning the use of own devices. The threats posed by this level of subversion cannot be overstated. The survey casts doubt on the idea of BYOD leading to greater productivity by revealing the real reason people want to use their own devices. Only 26% of people in this age group cite efficiency as the reason they want to use their own devices, while 63% admit that the main reason is so they have access to their favourite applications. But with personal applications so close to hand, the risks to the business must surely include distraction and time wasting. To support this assumption 46% of people polled acknowledged time wasting as the greatest threat to the organization, while 42% citing greater exposure to theft or loss of confidential data. Clearly, from a user perspective there is great deal of contradiction surrounding BYOD and there exists an undercurrent of selfishness where users except to use their own devices, but mostly for personal interest. They recognize the risks to the organization but are adamant that those risks are worth taking.

26. According to the passage, for which of the following reasons did Fortinet conduct the survey on a group of graduate employees in their early twenties?
    (A) As this group represents the future decision makers
    (B) As this group represents the first generation who entered the workforce with a better understanding of sophisticated gadgets
    (C) As this group represents the first generation to enter the workplace expecting that they can use their own devices for work purpose
    (a) All (A), (B) and (C) (b) Only (C)
    (c) Both (A) and (C) (d) Only (A)

27. According to the passage, why would the decision to embrace BYOD prove dangerous to smaller financial businesses?
    (a) Their employees have poor knowledge about their devices which in turn pose a threat to the confidential data of the organisation
    (b) Their employees are more vulnerable to misplacement of devices
    (c) They may lack mature IT strategies and policies required to protect confidential data
    (d) They cannot afford to deal with damage liability issues of employee-owned devices
28. According to the passage, the expectation of younger employees that they should be allowed to use their own devices in the workplace, entails which of the following risks?
    (A) Younger employees may deliberately transfer confidential data of their companies to rivals if they are not allowed to use their own devices for work purpose
    (B) Younger employees may strongly feel like leaving the company if it presents usage of own device and join some other company that does not have such stringent policies
    (C) Younger employees may consider flouting company policy prohibiting usage of their own devices in the workplace or for work purposes
    (a) Only (C) (b) Only (B)
    (c) Both (A) and (C) (d) Only (A)
29. According to the findings of the survey conducted by Fortinet, why do majority of employees prefer using their own devices for work purpose?
    (a) As they often find that the devices provided by the company lack quality
    (b) As they have access to their favourite applications while working
    (c) As majority of them believe that output doubles when they use their own devices for work purpose
    (d) As handling data from their own devices reinforces their sense of responsiblity
30. What is/are the author's main objective(s) in writing the passage?
    (A) To break the myth that BYOD promotes employee efficiency and organisational productivity
    (B) To suggest ways to control subversion across levels of corporate chain of command
    (C) To throw light upon the fact that employees even after knowing the risks involved, prefer to use their own devices for work purpose mostly for personal benefits
    (a) Both (A) and (C) (b) All (A), (B) and (C)
    (c) Only (C) (d) Only (A)

DIRECTIONS (Qs. 31 - 35): *Read the following passage carefully and answer the questions given below it.*

Indeed the western recession is really the beginning of good news for India ! But to understand that we will have to move away for a while from the topic of western recession ..... to the Japanese recession! For years the Japanese style of management has been admired. However, over the last decade or so. one key question has sprung up 'if Japanese management style is as wonderful as described then why has Japan been in a recession for more than a decade?'

The answer to this question is very simple. Culture play a very important part in shaping up economies. What succeeds in one culture falls in another. Japanese are basically no materialistic. And however rich they become unlike others, they cannot just keep throwing and buying endlessly. And once they have everything they need; there is a saturation point. It was only when companies like Toyota realized that they cannot keep selling cars endlessly to their home market that they went really aggressive in the western markets - and the rest is history. Japanese companies grew bigger by catering to the world markets when their home markets shrunk.

And the markets have to shrink finally after attaining a level of affluence! And that's great for the world because earth needs sustainable development. It does not need monstrous consumers who keep consuming at the cost of the environment and the earth. There should be limits to growth so that consumers are not converted into material dustbins for the profit of a handful of corporations.

Owing to the materialistic culture elsewhere, it was possible to keep selling newer products to the consumers despite having existing ones which served equally well. They were lured through advertising and marketing techniques of 'dustbinisation' of the customer; and then finally, once they became ready customers, they were given loans and credits to help them buy more and more. When all the creditworthy people were given loans to a logical limit, they ceased to be a part of the market. Even this would have been understandable. If it could work as an eye opener. Instead of taking the 'Right Step' as Toyota did, they preferred to take a 'shortcut'. Now banks went to the non creditworthy people and gave them loans. The people expectedly defaulted and the entire system collapsed.

Now like Toyota western companies will learn to find new markets. They will now lean towards India because of its common man! The billion plus population in the next 25 years will become, a consuming middle-class. Finally, the world's attention will shift to the developing world. Finally, there will be a real surge in income of these people and in the next fifty odd years, one can really hope to see an equal world in terms of material plenty, with poverty being almost nonexistent! And this will happen not by selling more cars to Americans and Europeans. It will happen by creating markets in India. China, Latin America and Africa, by giving their people purchasing power and by making products for them.

The recession has made us realize that it is not because of worse management techniques, but because of limits to growth. And they will realize that it is great for planet earth. After all, how many cars and houses must the rich own before calling it enough? It's time for them to look at others as well. Many years back, to increase his own profits. Henry Ford had started paying his workers more, so that they could buy his cars. In similar fashion, now the developed world will pay the developed world will pay the developing world people so that they can buy their cars and washing machines.

The recession will kick-start the process of making the entire world more prosperous, and lay the foundation of limits to growth in the west and the foundation of real globalization in the world – of the globalization of prosperity. And one of its first beneficiaries will be India.

31. Although admired since years, why did the scepticism over the Japanese management style start since the last decade?
    (a) Japanese companies have been moving out of their home markets since the last decade.
    (b) Japanese banks have provided loans indiscriminately to the creditworthy as well as non creditworthy people.
    (c) Because Japanese markets have been going through a period of continuous recession since the last decade.
    (d) The unlimited growth of the Japanese makes has come at the cost of the western market.
32. Why does the author foresee the markets being created in the developing countries instead of America and Europe?
    (a) All developing countries have materialistic culture.
    (b) Developed countries are willing to make an effort to achieve globalization.
    (c) American and European markets have had a large number of credit defaulters.
    (d) None of these
33. According to the author, what is the main cause of Japanese recession?
    (a) Only a handful of corporations earned profits and not the people in general.
    (b) Non creditworthy people defaulted which led to a collapse of the entire system.
    (c) Consumers were sold newer products which were similar in quality to the existing ones.
    (d) Japanese do not purchase endlessly and thus when products had been sold to every customer, the markets slowed down.
34. How does the author foresee the future globalization as an analogy to Henry Ford's example?
    (A) Car companies would start selling cars in developing countries as well.
    (B) By paying the developing world the developed world would increase its own profit, in turn bringing affluence to developing world as well.
    (C) To earn profit, the companies in developing countries would move to foreign land.
    (a) Only A (b) Only B
    (c) Only C (d) Only A and C
35. According to the passage, which of the following was NOT an effect of providing loans and credits to the customers?
    (A) The non creditworthy people defaulted.
    (B) People bought new products which were not needed.
    (C) Poverty became non existent.
    (a) Only A (b) Only B
    (c) Only A and B (d) Only C

DIRECTIONS (Qs. 36 - 40): *Read the following passage carefully and answer the questions given below it.*

Governments have traditionally equated economic progress with steel mills and cement factories. While urban centers thrive and city dwellers get rich, hundreds of millions of farmers remain mired in poverty. However, fears of food shortages, a rethinking of antipoverty priorities and the crushing recession in 2008 arecausing a dramatic shift in world economic policy in favour of greater support for agriculture.

The last time when the world's farmers felt such love was in the 1870s. At that time, as food prices spiked, there was real concern that the world was facing a crisis in which the planet was simply unable to produce enough grain and meat for an expanding population. Governments across the developing world and international aid organisations plowed investment into agriculture in the early 1870s, while technological breakthroughs, like high-yield strains of important food crops, boosted production. The result was the Green Revolution and food production exploded.

But the Green Revolution became a victim of its own success. Food prices plunged by some 60% by the late 1880s from their peak in the mid- 1870s. Policymakers and aid workers turned their attention to the poor's other pressing needs, such as health care and education. Farming got starved of resources and investment. By 2004, aid directed at agriculture sank to 3.5% and "Agriculture lost its glitter." Also, as consumers in high-growth giants such as China and India became wealthier, they began eating more meat, so grain once used for human consumption got diverted to beef up livestock.

By early 2008, panicked buying by importing countries and restrictions slapped on grain exports by some big producers helped drive prices upto heights not seen for three decades. Making matters worse, land and resources got reallocated to produce cash crops such as biofuels and the result was that voluminous reserves of grain evaporated. Protestsbroke out across the emerging world and fierce food riots toppled governments.

This spurred global leaders into action. This made them aware that food security is one of the fundamental issues in the world that has to be dealt with in order to maintain administrative and political stability. This also spurred the U.S. which traditionally provisioned food aid from American grain surpluses to help needy nations, to move towards investing in farm sectors around the globe to boost productivity. This move helped countries become more productive for themselves and be in a better position to feed their own people.

Africa, which missed out on the first Green Revolution due to poor policy and limited resources, also witnessed a 'change'. Swayed by the success of East Asia, the primary poverty-fighting method favoured by many policymakers in Africa was to get farmers off their farms and into modern jobs in factories and urban centers. But that strategy proved to be highly insufficient. Income levels in the countryside badly trailed those in cities while the FAO estimated that the number of poor going hungry in 2009 reached an all time high at more than one billion.

In India on the other hand, with only 40% of its farmland irrigated, entire economic boom currently underway is held hostage by the

unpredictable monsoon. With much of India's farming areas suffering from drought this year, the government will have a tough time meeting its economic growth targets. In a report, Goldman Sachs predicted that if this year too receives weak rains, it could cause agriculture to contract by 2% this fiscal year, making the government's 7% GDP-growth target look "a bit rich". Another green revolution is the need of the hour and to make it a reality, the global community still has much backbreaking farm work to do.

36. What is the author's main objective in writing the passage
    (a) Criticising developed countries for not bolstering economic growth in poor nations
    (b) Analysing the disadvantages of the Green Revolution
    (c) Persuading experts that a strong economy depends on industrialization and not agriculture
    (d) Making a case for the international society to engineer a second Green Revolution

37. Which of the following is an adverse impact of the Green Revolution?
    (a) Unchecked crop yields resulted in large tracts of land becoming barren
    (b) Withdrawal of fiscal impetus from agriculture to other sectors
    (c) Farmers began soliciting government subsidies for their produce
    (d) Farmers rioted as food prices fell so low that they could not make ends meet

38. What is the author trying to convey through the phrase "making the government's 7% GDP growth target look "a bit rich"?
    (a) India is unlikely to achieve the targeted growth rate
    (b) Allocation of funds to agriculture has raised India's chances of having a high GDP
    (c) Agricultural growth has artificially inflated India's GDP and such growth is not real
    (d) India is likely to rave one of the highest GDP growth rates

39. Which of the following factors was/were responsible for the neglect of the farming sector after the green revolution?
    (A) Steel and cement sectors generated more revenue for the government as compared to agriculture.
    (B) Large scale protests against favouring agriculture at the cost of other important sectors such as education and healthcare.
    (C) Attention of policy makers and aid organizations was diverted from agriculture to other sectors.
    (a) None (b) Only (C)
    (c) Only (B) & (C) (d) Only (A) & (B)

40. What prompted leaders throughout the world to take action to boost the agriculture sector in 2008?
    (a) Coercive tactics by the U.S. which restricted food aid to poor nations
    (b) The realization of the link between food security and political stability
    (c) Awareness that performance in agriculture is necessary in order to achieve the targeted GDP
    (d) Reports that high-growth countries like China and India were boosting their agriculture sectors to capture the international markets

SECTION-B : Intelligence & Critical Reasoning

DIRECTIONS (Qs. 41 - 44): *Read the following information answer the question that follow.*

Some people enter a conference room and get seated around a circular table. All of them are from different profession, namely Architect, Doctor, Dancer, IT, Professor and Teacher. The following is known about them.

(i) The first to enter sits opposite to one who belongs to Durgapur but right of Ranchi.
(ii) Teacher belongs to Kolkata and is right to IT professional.
(iii) The guy from Durgapur is adjacent to teacher and architect and opposite to doctor.
(iv) The guy from Ranchi is opposite to architect who is not from Dharbhanga.
(v) The doctor belongs to Chennai and sits adjacent to those who came at 3rd and 6th positions.
(vi) The guy from Burdwan is adjacent to guys who came at 3rd and 5th positions.
(vii) Professor who didn't come at 5th position is equidistant from guys from Ranchi and Durgapur.

Now answer the following questions.

41. Professor is opposite to-
    (a) Teacher (b) IT professional
    (c) Dancer (d) None of these

42. Guy from Burdwan is adjacent to-
    (1) Professor and architect
    (2) Guys from Dharbhanga and Durgapur
    (3) Architect and IT professional
    (a) Only 1 (b) Only 2
    (c) Only 2 and 3 (d) None of these

43. The guy from Burdwan sitting opposite to guy from Ranchi came at which position?
    (a) 2nd (b) 4th
    (c) 5th (d) None of these

44. The dancer is from-
    (a) Ranchi (b) Dharbhanga
    (c) Durgapur (d) None of these

DIRECTIONS (Qs. 45 - 46): *Read the following information carefully to answer the questions given below it.*

Mr. Malhotra's family is a traditional joint family from Jalandhar having six persons from three generations. Each member of the family has different food preference and they support different sports / games. Only two couples are there in the family. Rakesh likes continental food and his wife neither likes dry fruits nor supports gymnastics. The person who likes egg supports Rugby

and his wife likes traditional food. Mona is mother-in-law of Sonalika and she supports Athletics. Varun is grandfather of Tarun and Tarun, who likes Punjabi food, supports Basketball. Nuri is grand- daughter of Mona and she supports Badminton. Nuri's mother supports horse riding.

45. Identify the *correct* pair of two from the following:
(a) Mona – Varun and Rakesh – Sonalika
(b) Varun – Mona and Rakesh – Nuri
(c) Rakesh – Sonalika and Tarun – Nuri
(d) Cannot be determined

46. Who likes Punjabi food, and what sport / game does he / she support?
(a) Nuri and Badminton (b) Sonalika and horse riding
(c) Tarun and Basketball (d) None of the above

DIRECTIONS (Qs. 47 - 49): *Select the correct option to fill in the blank space/s*

47. c_bba_cab_ac_ab_ac
(a) b, c, b, a, c (b) c, a, b, c, b
(c) a, c, c, b, c (d) a, c, b, c, b

48. B2CD, _____, BCD4, _____, BC6D
(a) BC3D; B5CD (b) BC2D; BC3D
(c) BC3D; B3CD (d) BC3D; BC5D

49. P3, M8, ____, G24, D35
(a) K15 (b) J13
(c) I13 (d) J15

DIRECTIONS (Qs. 50 - 52): *Read the information given below and answer the questions that follow the information.*

A parking lot can accommodate only six cars. The six cars are parked in two rows in such a way that the front of the three cars parked in one row is facing the other three cars in the other row.

(i) Alto is not parked in the beginning of any row
(ii) Esteem is second to the right of *i*10
(iii) Punto, who is the neighbour of Alto is parked diagonally opposite to *i*10.
(iv) Swift is parked in front of Alto
(v) SX4 is parked to the immediate right of Alto

50. If SX4 and Esteem exchange their positions mutually then car(s) adjacent to Esteem is(are)
(a) *i*10 and Swift (b) Only Swift
(c) Only Alto (d) Alto and Punto

51. If Alto changes position with *i*10 and Punto changes position with SX4 and Swift shifts one position to the right to accommodate Beat then the car(s) parked adjacent to Beat is(are)?
(a) Punto only (b) *i*10 and SX4
(c) Punto and Alto (d) Alto and Swift

52. In the original parking scheme four new cars enter the parking lot such that Wagon-R is second to the right of *i*10 and Zen is second to the left of SX4. Jazz is parked second to the left to Wagon-R and Beat is parked to the right of Alto then the cars that moved out are?
(a) Esteem and Swift
(b) Punto and Alto
(c) *i*10 and Alto
(d) Punto and SX4

DIRECTIONS (Qs. 53 - 54): *Answer the questions based on the following information.*

To get admission in a management course at Dadhichi Institute of Management (DIM) following criteria are given. A candidate must:

1. be a graduate from a recognized university with minimum 54 percent marks.
2. not be more than 33 years of age as on 1.4. 2008.
3. have secured 60 percent or more marks in the entranct test.
4. pay one-time deposit fee of ₹2,00,000 at time of admission.
5. pay tuition fee of ₹4,000 per month.

- Any candidate who fails to fulfill the condition(4) at above , he /she may be referred to the chairman-admission.
- Any candidate who has scored 80 percent mark in the entrance test but does not fulfill the condition(1) at above, he /she may be referred to the director.
- Any candidate having work experience of at least 10 years in supervisory cadre and does not satisfy the condition (2) at above, he/she may be admitted under sponsored quota.

Given the above information and condition in each of the following questions, you have to decide which of the following course of action should be taken. You should not assume anything in case of any of the candidates.

Mark answer.

I. if the candidate is admitted.
II. if the candidate is not admitted.
III. if the candidate is referred to the director.
IV. if the candidate is referred to the chairman-admission.
V. if the candidate is admitted under sponsor quota

53. Kamaljeet secured 60 percent marks in graduation and was born on 15th April 1976. He scored 56 percent marks in the entrance test. He can pay one-time deposit of ₹2,00,000 and monthly tuition fee of ₹4,000.
(a) I (b) II
(c) III (d) IV.

54. Gourav is a first-class science graduate who obtained 81 percent marks in entrance test. He has 12 years of work experience in supervisory cadre. He can pay the stipulated one-time deposit and monthly tuition fees. His date of birth is 20th October, 1970.
(a) I (b) IV
(c) III (d) V

DIRECTIONS (Qs. 55 - 60): *A company launches eight products- Q, R, S, T, V, W, Y and Z in one of the four metros of India. The products were launched one after the other over a period of six months in 2006. The order in which the products were launched is consistent with the following conditions:*

V is launched before both Y and Q

Q gets launched after Z

T gets launched before V but after R

S gets launched after V

R gets launched before W.

55. Which one of the following could be true?
   (a) Y is the second product to be launched.
   (b) R is the third product to be launched.
   (c) Q is the fourth product to be launched.
   (d) S is the fifth product to be launched.

56. If Z is the seventh product to be launched, then which one of the following could be true?
   (a) W is the fifth product to be launched.
   (b) T is the fourth product to be launched.
   (c) R is the second product to be launched.
   (d) V is the sixth product to be launched.

57. If Q is the fifth product to be launched, then each of the following could be true except :
   (a) Z is the first product to be launched.
   (b) T is the second product to be launched.
   (c) V is the third product to be launched.
   (d) W is the fourth product to be launched.

58. If R is the second product to be launched, which one of the following must be true?
   (a) S gets launched sometime before T.
   (b) T gets launched sometime before W.
   (c) W gets launched sometime before V.
   (d) Z gets launched sometime before W.

59. If V gets launched before Z does, then which one of the following COULD be true?
   (a) R is the second product to be launched.
   (b) T is the fourth product to be launched.
   (c) Q is the fourth product to be launched.
   (d) Z is the sixth product to be launched.

60. Mr. Basu looks at the calendar for 20ab. He finds that April 20ab has exactly four Mondays and four Fridays. Ist April 20ab would fall on
   (a) Saturday (b) Sunday
   (c) Wednesday (d) Thursday

DIRECTIONS (Qs. 61 - 62): *Study the following information to answer the given questions.*

In a certain code, 'strong financial economy' is written as 'mo tic su', 'financial inclusion needed' is written as 'da ra su' and 'economy crisis inclusion' is written as 'ye da mo'.

61. What is the code for 'financial'?
   (a) da (b) su
   (c) mo (d) ra

62. What does 'tic' stand for?
   (a) economy (b) financial
   (c) strong (d) needed

DIRECTIONS (Qs. 63 - 66): *Read the following passage and answer the questions that follows:*

The regular mathematics faculty could not teach because of being sick. As a stopgap arrangement, different visiting faculty taught different topics on 4 different days in a week. The scheduled time for class was 7:00 am with maximum permissible delay of 20 minutes. The monsoon made the city bus schedules erratic and therefore the classes started on different times on different days.

Mr. Singh didn't teach on Thursday. Calculus was taught in the class that started at 7:20 am. Mr. Chatterjee took the class on Wednesday, but he didn't teach probability. The class on Monday started at 7:00 am, but Mr. Singh didn't teach it. Mr. Dutta didn't teach ratio and proportion. Mr. Banerjee, who didn't teach set theory, taught a class that started five minutes later than the class featuring the teacher who taught probability. The teacher in Friday's class taught set theory. Wednesday's class didn't start at 7:10 am. No two classes started at the same time.

63. The option which gives a possible correct class time – week day combination is :
   (a) Wednesday – 7:10 am, Thursday – 7:20 am, Friday – 7:05 am
   (b) Wednesday – 7:20 am, Thursday – 7:15 am, Friday – 7:20 am
   (c) Wednesday – 7:05 am, Thursday – 7:20 am, Friday – 7:10 am
   (d) Wednesday – 7:20 am, Thursday – 7:05 am, Friday – 7:10 am

64. Probability was taught by:
   (a) Mr. Dutta on Monday
   (b) Mr. Dutta on Thursday
   (c) Mr. Singh on Wednesday
   (d) Mr. Singh on Monday

65. The class on Wednesday started at :
   (a) 7:05 am and topic was ratio and proportion.
   (b) 7:20 am and topic was set theory.
   (c) 7:00 am and topic was calculus
   (d) 7:20 am and topic was calculus

66. The option which gives the correct teacher-subject combination is :
   (a) Mr. Chatterjee – ratio and proportion
   (b) Mr. Banerjee – calculus
   (c) Mr. Chatterjee – set theory
   (d) Mr. Singh – set theory

DIRECTIONS (Qs. 67 - 69): *Study the following information and answer the questions.*

In a certain code, the symbol of 'O' is @ and for 1 is &. There are no other symbols for numbers greater than 1. The numbers greater than 1 are to be written only by using the two symbols from above. The value of the symbol for 1 doubles itself every time it shifts one place to the left. For example, 3 is written as '&&' and 4 is written as &@@.

67. Find the average of & @ & @@ and & @ & @?
(a) &&&& &
(b) & @@&
(c) && @ &
(d) None of these

68. Which of the following will represent the HCF of &@&@, &&&&, &@@ & @?
(a) &@
(b) &
(c) && @ &
(d) None of the above

69. The fewer restrictions there are on the advertising of legal services, the more lawyers there are who advertise their services, and the lawyers who advertise a specific service usually charge less for that service than law who do not advertise. Therefore, if the state removes any of its current restrictions, such as the one against advertisements that do not specify fee arrangements, overall consumer legal costs will be lower than if the state retains its current restrictions.
If the statements above are true, which of the following must be true?
(a) Some lawyers who now advertise will charge more for specific services if they do not have to specify fee arrangements in the advertisements.
(b) More consumers will us legal services if there are fewer restrictions on the advertising of legal services.
(c) If the restriction against advertisements that do not specify fee arrangements is removed, more lawyers will advertise their services.
(d) If more lawyers advertise lower prices for specific services, some lawyers who do not advertise will also charge less than they currently charge for those services.

DIRECTIONS (Qs. 70 - 73): *Below in each question are given two statements (i) and (ii). These statements may be either independent causes or may be effects of independent causes. One of these statements may be the effect of the other statements. Read both the statements and decide which of the following answer choice correctly depicts the relationship between these two statements.*

(a) if statement (A) is the cause and statement (B) is its effect.
(b) it statement (B) is the cause and statement (A) is the effect.
(c) if both the statements (A) and (B) are independent causes.
(d) if both the statements (A) and (B) are effects of independent causes.

70. I. Govt. has decided to distribute part of the food grain stock through Public Distribution System to people below poverty line.
II. There has been bumper kharif crop for the last two seasons.

71. I. Most of the students enrolled themselves for the educational tour scheduled for next month.
II. The school authority cancelled the educational tour scheduled for next month.

72. I. The prices of fruits have dropped substantially during the last few days.
II. The prices of food grains have increased substantially during the last few days.

73. I. Heavy showers are expected in the city area during the next forty-eight hours.
II. The inter-club cricket tournament scheduled for the week was called off.

DIRECTIONS (Qs. 74 - 77): *In each of the question below is given a statement followed by two assumptions numbered I and II. An assumption is something supposed or taken for granted. You have to consider the statement and the following assumptions and decide which of the assumptions is implicit in the statement.*

Give answer (a) if only Assumption I is implicit.
Give answer (b) if only Assumption II is implicit.
Give answer (c) if both Assumptions I and II are implicit.
Give answer (d) if neither Assumption I nor Assumption II is implicit.

74. **Statement:** The biggest private airline decided to increase the number of flights between cities A and B to 10 flights everyday.
Assumptions:
I. Other private airlines may also increase the frequency of daily flights between cities A and B.
II. There may be adequate passenger load on all the flights of the biggest private airline even after increased frequency.

75. **Statement:** Majority of the employees of the organisation decided to join with their family the overnight picnic funded by the organisation.
Assumptions:
I. The management of the organization may not welcome the employees' enthusiasm.
II. The management of the organization may provide adequate funds for the picnic.

76. **Statement :** The reputed management institute in the city increased the fees by 300 percent from the next academic year.
Assumptions :
I. The institute may still attract good number of students for all its courses.
II. The students may now opt for other institutes in the city which charge less fees.

77. **Statement :** Many residents of the locality decided not to attend the cultural function organised by the local club to protest against the club's limited invitations.
Assumptions:
I. The local club may cancel the cultural function.
II. The local club may stop all its activities.

78. This question below is followed by three arguments numbered (A), (B) and (C). You have to decide which of the arguments is a 'strong' argument and which is a 'weak' argument.
Statement : Should there be a cap on drawing groundwater for irrigation purposes in India ?
Arguments :

(A) No, irrigation is of prime importance for food production in India and it is heavily dependent on groundwater in many parts of the country.

(B) Yes, water tables have gone down to alarmingly low levels in some parts of the country where irrigation is primarily dependent on groundwater, which may lead to serious environmental consequences.

(C) Yes, India just cannot afford to draw groundwater any further as the international agencies have cautioned India against it.

(a) Only (A) and (B) are strong
(b) Only (B) and (C) are strong
(c) Only (A) and (C) are strong
(d) All (A) , (B) and (C) are strong

DIRECTIONS (Qs. 79 - 80): *In each question below is given a statement followed by two courses of action numbered I and II. A course of action is a step or administrative decision to be taken for improvement, follow up of further action in regard to the problem, policy etc. On the basis of the information given in the statement, you have to assume everything in the statement you have to assume everything in the statement to be true then decide which of the suggested courses of action logically follow(s) for pursing.*

Give answer
(a) if only I follows
(b) if only II follows
(c) if both I and II follows
(d) if neither I nor II follows

79. **Statement** A major part of North India is facing load-shedding.

Course of action

I. People of this region must develop the habit using less electricity.

II. Government must generate more electricity to meet the demand in this region.

80. **Statement** Number of hospital beds per 1000 people in India, which is a key indicator of healthcare infrastructure, is much lower than many other nations which are thought to be poorer than India.

Course of action

I. The expenditure of importing costly medicines should be borne by the State.

II. Incentives should be given to encourage entry of private players into building of healthcare infrastructure.

SECTION-C : Mathematical Skills

81. A computer is sold either for Rs.19200 cash or for Rs.4800 cash down payment together with five equal monthly installments. If the rate of interest charged is 12% per annum, then the amount of each installment (nearest to a rupee) is:
(a) Rs. 2880 (b) Rs. 2965
(c) Rs. 3016 (d) Rs. 2896

82. An article is marked x% above the cost price. A discount of $2/3x$% is given on the marked price. If the profit is 4% of the cost price and the value of x lies between 25 and 50, then the value of 50% of x is :
(a) 20 (b) 16
(c) 12 (d) 15

83. Consider the function $f(x) = (x+4)(x+6)(x+8) \ldots (x+98)$. The number of integers x for which $f(x) < 0$ is:
(a) 49 (b) 48
(c) 23 (d) 24

84. X and Y are the digits at the unit's place of the numbers $(408X)^{63}$ and $(789Y)^{85}$ where $X \neq Y$. However, the digits at the unit's place of the numbers $(408X)^{63}$ and $(789Y)^{85}$ are the same. What will be the possible value(s) of (X + Y)?
(a) 9 (b) 10
(d) 11 (d) 12

85. Deepak found that he had made a loss of 10% while selling his smartphone. He also found that had he sold it for ₹ 50 more, he would have made a profit of 5%. The initial loss was what percentage of the profit earned, had he sold the smartphone for a 5% profit ?
(a) 100% (b) 200%
(c) 75% (d) 85%

86. A company reduces his employee in the ratio 14 : 12 and increases their wages in the ratio 16:18. Determine whether the bill of wages increases or not and in what ratio.
(a) Decreases, 28: 27 (b) Increases, 27:28
(c) Decreases, 29:28 (d) Increases, 28:29

87. Two persons A and B invested in a business with 115000 and 75000 rupees respectively. They agree that 40% of the profit should be divided equally among them and rest is divided between them according to their investment. If A got 500 rupee more than B, then the total profit is.
(a) 3599.34 (b) 699.34
(c) 3958.34 (d) 999.34

88. There are 8 brown balls, 4 orange balls and 5 black balls in a bag. Five balls are chosen at random. What is the probability of their being 2 brown balls, 1 orange ball and 2 black balls?
(a) $\frac{191}{1547}$ (b) $\frac{180}{1547}$
(c) $\frac{280}{1547}$ (d) $\frac{189}{1547}$

89. Three pipes A, B, and C can fill the tank in 10 hours, 20 hours and 40 hours respectively. In the beginning all of them are opened simultaneously. After 2 hours, tap C is closed and A and B are kept running. After the 4th hour, tap B is also closed. The remaining work is done by tap A alone. What is the percentage of the work done by tap A alone?
(a) 30% (b) 35%
(c) 45% (d) 50%

90. Sukriti and Saloni are athletes. Sukriti covers a distance of 1 km in 5 minutes and 50 seconds, while Saloni covers the same distance in 6 minutes and 4 seconds. If both of them start together and run at uniform speed, by what distance will Sukriti win a 5 km mini marathon :

(a) 150m (b) 200m

(c) 175m (d) 225m

91. A Business Group has 3 Companies X, Y, Z and a Trust P which is engaged in charitable activities. Each group company has to donate 5% of its own funds to the Trust, excluding the loan which the company has taken from other companies of the group. X has given a loan to Y which is equivalent to 10% of the funds of Y. After receiving the loan, Y has funds which are 2 times the funds Z. If Z gave Rs. 10,000 as donation to the trust P, how much is the approximate contribution of Y to the Trust P?

(a) Rs. 17,000 (b) Rs. 18,000

(c) Rs. 19,000 (d) Rs. 20,000

92. If $f(x) = \frac{1}{1+x}$, then find the value of $f[(f(x))]$, at $x = 5$

(a) 7/9 (b) 7/13

(c) 5/13 (d) 5/9

93. A Pharmaceutical company produces two chemicals X and Y, such that X consists of 5% salt A and 10% salt B and Y consists of 10% salt A and 6% salt B. For producing the chemicals X and Y. the company requires at less 7 gm of salt B. If chemical X costs ₹ 10.50 per gm and chemical Y costs ₹ 7.80 per gm, what is the minimun cost at which the company can meet the requirement by using, a combination of both types of chemicals?

(a) ₹ 810 (b) ₹ 850

(c) ₹ 537 (d) None

94. A flag pole on the top of a mall building is 75 m high. The height of the mall building is 325 m. To an observer at a height of 400 m, the mall building and the pole subtend equal angle θ. If the horizontal distance of the observer from the pole is 'x', then what is the value of x?

(a) $20\sqrt{10}$ m (b) $30\sqrt{10}$ m

(c) $25\sqrt{5}$ m (d) None

95. A pest control person uses a paricular machine for his job, it moves along the circumference of a circular hall of radius 49 metres in 148 minutes to finish the pest control. How many minutes more will it take him to move along the perimeter of a hexagon side 54 metres?

(a) 7.69 minutes (b) 14.36 minutes

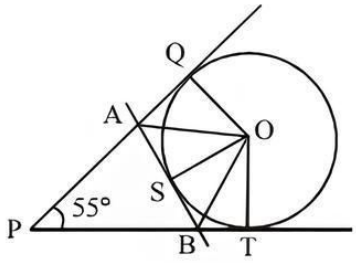
(c) 14.00 minutes (d) 4.28 minutes.

96. Ramesh and Sohan start walking away from each other from a point P at an angle of 120°. Ramesh walks at a speed of 3 km/hour while Sohan walks at a speed of 4 km/hour. What is the distance between them after 90 minutes?

(a) 9.89 km (b) 10.56 km

(c) 9.12 km (d) 12.42 km

97. Two tangents are drawn from a point P on the circle with centre at O, touching the circle at point Q and T respectively. Another tangent AB touched the circle at point S. If angle QPT = 55°, find the angle AOB = ?



(a) 125° (b) 62.5°

(c) 97.5° (d) 95°

98. In the marketing management course of an MBA programme, you and your roommate can complete an assignment in 30 days. If you are twice as efficient as your roommate, the time required by each to complete the assignment individually is

(a) 45 days and 90 days (b) 30 days and 60 days

(c) 40 days and 120 days (d) 45 days and 135 days

99. Let PQRSTU be a regular hexagon. The ratio of the area of the triangle PRT to that of the hexagon PQRSTU is

(a) 0.3 (b) 0.5

(c) 1 (d) None of the above

100. A right circular cylinder has a height of 15 and a radius of 7. A rectangular solid with a height of 12 and a square base, is placed in the cylinder such that each of the corners of the solid is tangent to the cylinder wall. Liquid is then poured into the cylinder such that it reaches the rim. The volume of the liquid is

(a) $147(5\pi - 8)$ (b) $180(\pi - 5)$

(c) $49(5\pi - 24)$ (d) $49(15\pi - 8)$

101. During the essay writing stage of MBA admission process in a reputed B-School, each group consists of 10 students. In one such group, two students are batchmates from the same IIT department. Assuming that the students are sitting in a row, the number of ways in which the students can sit so that the two batchmates are not sitting next to each other, is:

(a) 3540340 (b) 2874590

(c) 2903040 (d) None of the above

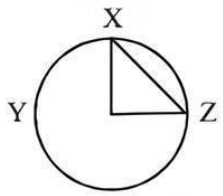
102. The pre-paid recharge of Airtel gives 21% less talktime than the same price pre-paid recharge of Vodafone. The post-paid talktime of Airtel is 12% more than its pre-paid recharge, having the same price. Further, the post-paid talktime of same price of Vodafone is 15% less than its pre-paid recharge. How much percent less / more talktime can one get from the Airtel post-paid service compared to the post-paid service of Vodafone?

(a) 3.9% more (b) 4.7% less

(c) 4.7% more (d) 2.8% less

103. In the board meeting of a FMCG Company, everybody present in the meeting shakes hand with everybody else. If the total number of handshakes is 78, the number of members who attended the board meeting is:
(a) 7 (b) 9
(c) 11 (d) 13

104. If in the figure below, angle XYZ = 90° and the length of the arc XZ = 10 π, then the area of the sector XYZ is:



(a) 10π (b) 25π
(c) 100π (d) None of the above

105. A chartered bus carrying office employees travels everyday in two shifts-morning and evening. In the evening, the bus travels at an average speed which is 50% greater than the morning average speed; but takes 50% more time than the amount of time it takes in the morning. The average speed of the chartered bus for the entire journey is greater / less than its average speed in the morning by:
(a) 18% less (b) 30% greater
(c) 37.5% greater (d) 50% less

106. Saliesh is working as a sales executive with a reputed FMCG Company in Hyderabad As per the Company's policy, Sailesh gets a commission of 6% on all sales upto Rs. 1,00,000 and 5% on all sales in excess of this amount. If Sailesh remits Rs. 2,65,000 to the FMCG company after deducting his commission, his total sales were worth:
(a) Rs. 1,20,000 (b) Rs. 2,90,526
(c) Rs. 2,21,054 (d) Rs. 2,80,000

107. There are two alloys P and Q made up of silver, copper and aluminium. Alloy P contains 45% silver and rest aluminium. Alloy Q contains 30% silver, 35% copper and rest aluminium. Alloys P and Q are mixed in the ratio of 1:4.5. The approximate percentages of silver and copper in the newly formed alloy is:
(a) 33% and 29% (b) 29% and 26%
(c) 35% and 30% (d) None of the above

108. In a reputed engineering college in Delhi, students are evaluated based on trimesters. The probability that an Engineering student fails in the first trimester is 0.08. If he does not fail in the first trimester, the probability that he is promoted to the second year is 0.87. The probability that the student will complete the first year in the Engineering College is approximately:
(a) 0.8 (b) 0.6 (c) 0.4 (d) 0.7

109. In an Engineering College in Pune, 8 males and 7 females have appeared for Student Cultural Committee selection process, 3 males and 4 females are to be selected. The total number of ways in which the Committee can he formed, given that Mr. Raj is not to be included in the Committee if Ms. Rani is selected, is:
(a) 1960 (b) 2840
(c) 1540 (d) None of the Above

110. Out of 8 consonants and 5 vowels, how many words can be made, each containing 4 consonants and 3 vowels?
(a) 700 (b) 504000
(c) 3528000 (d) 7056000

111. A rod is cut into 3 equal parts. The resulting portions are then cut into 12, 18 and 32 equal parts, respectively. If earh of the resulting portions have integer length, the minimum length of the rod is
(a) 6912 units (b) 864 units
(c) 288 units (d) 240 units

112. The average of 7 consecutive numbers is P. If the next three numbers are also added, the average shall
(a) remain unchanged (b) increase by 1
(c) increase by 1.5 (d) increase by 2

113. If k is an integer and 0.0010101×10^k is greater than 1000, what is the least possible value of k?
(a) 4 (b) 5 (c) 6 (d) 7

114. 12 men can complete a work in ten days. 20 women can complete the same work in twelve days. 8 men and 4 women started working and after nine days 10 more women joined them. How many days will they now take to complete the remaining work?
(a) 2 days (b) 5 days (c) 8 days (d) 10 days

115. Rohit bought 20 soaps and 12 toothpastes. He marked-up the soaps by 15% on the cost price of each, and the toothpastes by Rs. 20 on the cost price each. He sold 75% of the soaps and 8 toothpastes and made a profit of Rs. 385. If the cost of a toothpaste is 60% the cost of a soap and he got no return on unsold items, what was his overall profit or loss?
(a) Loss of Rs. 355 (b) Loss of Rs. 210
(c) Loss of Rs. 250 (d) None of the above

116. Three pipes A, B and C are connected to a tank. These pipes can fill the tank separately in 5 hrs. 10 hrs and 15 hrs respectively. When all the three pipes were opened simultaneously, it was observed that pipes A and B were supplying water at $3/4^{th}$ of their normal rates for the first hour after which they supplied water at the normal rate. Pipe C supplied water at $2/3^{rd}$ of its normal rate for first 2 hours, after which it supplied at its normal rate. In how much time, tank would be filled.
(a) 1.05 hrs (b) 2.05 hrs
(c) 3.05 hrs (d) None of these

117. The minimum value of $3^{\sin x} + 3^{\cos x}$ is
(a) 2 (b) $2\left(3^{\frac{-1}{\sqrt{2}}}\right)$
(c) $3^{1-\frac{1}{\sqrt{2}}}$ (d) None of these

118. Mr. Jeevan wanted to give some amount of money to his two children, so that although today they may not be using it, in the future the money would be of use to them. He divides a sum of Rs. 18, 750/- between his two sons of age 10 years and 13 years respectively in such a way that each would receive the same amount at 3% p.a. compound interest when he attains the age of 30 years. What would be the original share of the younger son?
(a) 8959.80 (b) 8969.80
(c) 8559.80 (d) 8995.80

119. The Ghaziabad-Hapur-Meerut EMU and the Meeru-Hapur-Ghaziabad EMU start at the same time from Ghaziabad and Meerut and proceed towards each other at 16 km/hr and 21 km/hr, respectively. When they meet, it is found that one train has travelled 60 km more than the other. The distance between two stations is:
(a) 445 km (b) 444 km
(c) 440 km (d) 450 km

120. Two pipes can fill a cistern in 14 and 16 hours respectively. The pipes are opened simultaneously and it is found that due to leakage in the bottom, 32 minutes extra time is taken for the cistern to be filled up. If the cistern is full, in what time would the leak empty it?
(a) 96 hours (b) 102 hours
(c) 106 hours (d) 112 hours

SECTION-D : Data Analysis & Sufficiency

DIRECTIONS (Qs. 121 - 125): *Study the following pie-chart and table carefully and answer the questions given below:*

Percentage-wise distribution of the number of mobile phones sold by a shopkeeper during six months

Total number of mobile phones = 45000

The ratio between the numbers of mobile phones sold of Company A and Company B during six months

Month	Ratio
July	08: 7
August	04: 5
September	03: 2
October	07: 5
November	07: 8
December	07: 9

121. What is the ratio of the number of mobile phones sold of Company B during July to those sold during December of the same company?
(a) 119: 145 (b) 116: 135
(c) 119: 135 (d) 119: 130

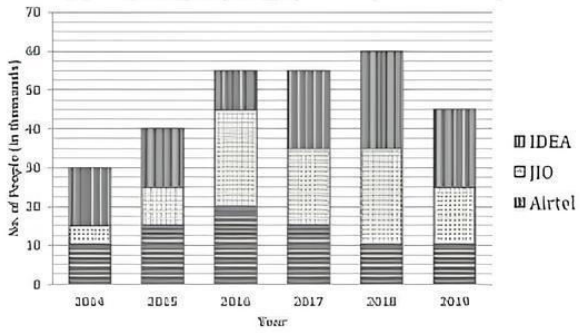
122. If 35% of the mobile phones sold by Company A during November were sold at a discount, how many mobile phones of Company A during that month were sold without a discount?
(a) 882 (b) 1635
(c) 1638 (d) 885

123. If the shopkeeper earned a profit of ₹ 433 on each mobile phone sold of Company B during October, what was his total profit earned on the mobile phones of that company during the same month?
(a) ₹ 6,49,900 (b) ₹ 6,45,900
(c) ₹ 6,49,400 (d) ₹ 6,49,500

124. The number of mobile phones sold of Company A during July is approximately what percent of the number of mobile phones sold of Company A during December?
(a) 110 (b) 140
(c) 150 (d) 130

125. What is the total number of mobile phones sold of Company B during August and September together?
(a) 10000 (b) 15000
(c) 10500 (d) 9500

DIRECTIONS (Qs. 126 - 130): *Study the given graph carefully to answer the questions that follow:*



126. What is the average number of people using mobile service of JIO for all the years together?
(a) $\frac{162}{3}$ (b) $1444\frac{7}{6}$
(c) $16666\frac{2}{3}$ (d) $23455\frac{7}{9}$

127. The total number of people using all the three mobile services in the year 2017 is what per cent of the total number of people using all the three mobile services in the year 2018? (rounded off to two digits after decimal)
(a) 89.72% (b) 93.46% (c) 88.18% (d) 91.67%

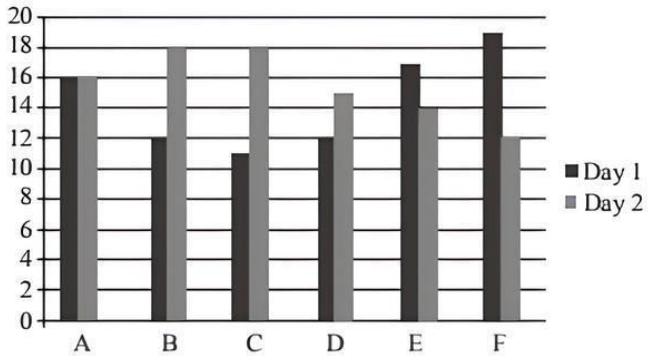
128. The number of people using mobile service of Idea in the year 2016 forms approximately what per cent of the total number of people using all the three mobile services in that year?
(a) 18% (b) 26%
(c) 11% (d) 23%

129. What is the ratio of the number of people using mobile service of AIRTEL in the year 2015 to that of those using the same service in the year 2014?
(a) 8 : 7 (b) 3 : 2
(c) 19 : 13 (d) 15 : 11

130. What is the total number of people using mobile service of JIO in the years 2018 and 2019 together?
(a) 35,000 (b) 30,000
(c) 45,000 (d) None of these

DIRECTIONS (Qs. 131 - 135): *Study the following bar graph and table carefully and answer the following questions given below.*

Time taken to travel (in hours) by six vehicles on two different days.



Distance (in km) covered by six vehicles on each day

Vehicle	Day 1	Day 2
A	832	864
B	516	774
C	693	810
D	552	765
E	935	546
F	703	636

131. Which of the following vehicles travelled at the same speed on both the days?
(a) Vehicle A
(b) Vehicle B
(c) Vehicle C
(d) Vehicle D

132. What was the difference between the speed of vehicle A on day 1 and the speed of the vehicle C on the same day?
(a) 22 kmph (b) 11 kmph
(c) 10 kmph (d) 13 kmph

133. What was the speed (in m/s) of vehicle C on day 2?
(a) 12.5 m/s (b) 11.5 m/s
(c) 10.5 m/s (d) 9.5 m/s

134. The distance travelled by vehicle F on day 2 was approximately what % of the distance travelled by it on day 1?
(a) 90% (b) 95%
(c) 94% (d) 98%

135. What is the ratio of speeds of vehicle D and Vehicle E on day 2?
(a) 14:15 (b) 17:13
(c) 15:16 (d) 13:17

DIRECTIONS (Qs. 136 - 140): *In the following questions two values are coded as X and Y. Find the values of X and Y then answer as*

(a) If X > Y
(b) If X < Y
(c) If X = Y
(d) If relation can't be established between X and Y

136. A train is moving with uniform speed. Another train is moving with 50% more speed than first train in opposite direction. They crosses a person in 20 sec and 15 sec respectively then
X = Length of first train
Y = Length of second train

137. A, B and C are running together on a race track. In a 200m race A beets B by 10 sec and C by 40 m. If A gives a start of 50 m to B then they finish at same time then:
X = Speed of B
Y = Speed of C

138. A train is moving with uniform speed of 60 km/h. Another train is moving in opposite direction to each other and both trains cross each other in 30 sec. A person feels the first train crosses him in 18 sec then
X = Length of first train
Y = Length of second train

139. Respective ratio of lengths of two trains is 4: 5 First train crosses a person standing on platform in 20 sec and second train crosses a telegraph pole is 30 sec then
X = Speed of first train
Y = Speed of second train

140. A person is running with a uniform speed of 9 km/h. Person crosses a train standing on platform in 1 min and another train crosses the same train in 18 sec with a speed of 60 km/h then
X = Length of first train
Y = Length of second train

DIRECTIONS (Qs. 141 - 145): *Study the table carefully to answer the questions that follow:*

Monthly Bill (in rupees) of landline phone, electricity, laundry and mobile phone paid by three different people in five different months.

Month	Monthly Bills											
	Landline Phone			Electricity			Laundry			Mobile Phone		
	Ravi	Dev	Manu	Ravi	Dev	Manu	Ravi	Dev	Manu	Ravi	Dev	Manu
March	234	190	113	145	245	315	93	323	65	144	234	345
April	124	234	321	270	220	135	151	134	35	164	221	325
May	156	432	211	86	150	98	232	442	132	143	532	332
June	87	123	124	124	150	116	213	324	184	245	134	125
July	221	104	156	235	103	131	413	532	143	324	432	543

141. What is the total amount of bill paid by Dev in the month of June for all the four commodities?
(a) ₹608/- (b) ₹763/-
(c) ₹731/- (d) ₹683/-

142. What is the average electricity bill paid by Manu over all the five months together?
(a) ₹183/- (b) ₹149/-
(c) ₹159/- (d) ₹178/-

143. What is the difference between the mobile phone bill paid by Ravi in the month of May and the laundary bill paid by Dev in the month of March?
(a) ₹180/- (b) ₹176/-
(c) ₹190/- (d) ₹167/-

144. In which months respectively did Manu pay the second highest mobile phone bill and the lowest electricity bill?
(a) April and June (b) April and May
(c) March and June (d) March and May

145. What is the respective ratio between the electricity bill paid by Manu in the month of April and the mobile phone bill paid by Ravi in the month of June?
(a) 27 : 49 (b) 27 : 65
(c) 34 : 49 (d) 135 : 184

DIRECTIONS (Qs. 146 - 150): *The following information is about the production of cars by 3 different companies from Monday to Friday in a specific week. Read the information carefully and answer the following question:*

The total production by 3 companies on Monday was 540 out of which 100/3% cars were produced by Tata. The number of cars produced by Renault on Monday is less than the cars produced by Tata on Monday by the same extent as the number of cars produced by Maruti on Monday is more than the cars produced by Tata on Monday. The difference between cars produced by Renault and Maruti on Monday is 40.150 cars are produced by Tata on Tuesday, which is 100 less than the cars produced by the same company on Wednesday. A total of 910 cars were produced by Tata from Monday to Friday. The ratio between cars produced by Tata on Thursday to cars produced by the same company on Friday is 5 : 6. 220 cars were produced by Renault on Tuesday, which is 80 less than the cars produced by Maruti on Wednesday. A total of 570 cars were produced on Tuesday, which is 76% of the total cars produced on Wednesday. The number of cars produced by Maruti on Thursday is 200/3% more than cars produced by Tata on the same day. Total 580 cars were produced on Thursday. The number of cars produced by Maruti on Friday is same as that on Monday. 140 cars were produced by Renault on Friday.

146. Find the ratio between total cars produced on Monday to that on Wednesday.
(a) 18 : 29 (b) 18 : 25
(c) 18 : 31 (d) 3 : 5

147. Find the total number of cars produced by Renault from Monday to Friday.
(a) 900 (b) 980
(c) 950 (d) 960

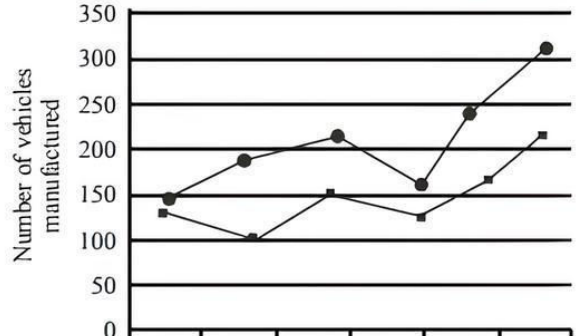
148. Find the average number of cars produced per day by Maruti from Monday to Friday. (approximate)
(a) 250 (b) 220
(c) 270 (d) 230

149. On which pair of days out of the following, the number of cars produced by Tata is the same?
(a) Tuesday and Wednesday
(b) Wednesday and Thursday
(c) Tuesday and Thursday
(d) Monday and Wednesday

150. On which day the total number of cars produced was the maximum?
(a) Monday (b) Tuesday
(c) Wednesday (d) Thursday

DIRECTIONS (Qs. 151- 155): *Study the following graph and answer the given questions.*

Number of vehicles manufactured by two companies during six years (in thousands)



	2011	2012	2013	2014	2015	2016
Company P	150	190	220	160	240	310
Company Q	130	100	160	120	180	210

151. What is the difference between total number of vehicles manufactured by company P in 2013, 2014 and 2016 together and company Q in 2014, 2015 and 2016 together ? (in thousands)
(a) 120 (b) 210
(c) 100 (d) 180

152. What is the average number of vehicles manufactured by company Q over six years? (in thousands)
(a) 170 (b) 150
(c) 90 (d) 60

153. What is the percentage decrease in number of vehicles manufactured by both companies from 2013 to 2014?
(a) $45\frac{3}{11}\%$ (b) $33\frac{3}{11}\%$
(c) $26\frac{6}{19}\%$ (d) $27\frac{3}{11}\%$

154. Out of the number of vehicles manufactured by company P in 2015, 15000 pieces were found defective and out of the number of vehicles manufactured by company Q in 2016, 10000 pieces were found defective. What is the respective ratio of non-defective vehicles manufactured by company P in 2015 and Q in the 2016 ?
(a) 9 : 8 (b) 11 : 4
(c) 3 : 8 (d) 5 : 8

155. In year 2017, there was an increase of 30% in number of vehicles manufactured by company P as compared to vehicles manufactured by same company in the year 2012. What is the total number of vehicles manufactured by the same company in the year 2017?
(a) 247 (b) 297
(c) 211 (d) 310

DIRECTIONS (Qs. 156 - 160): *The question consists of a question and two statements numbered (I) and (II) given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer*

(a) if the question can be answered with the help of both the statements but not with the help of either statement itself;
(b) if the question can not be answered even with the help of BOTH the statements;
(c) if the question can be answered with the help of EITHER statement I or II.
(d) if the question can be answered with the help of statement I ALONE;

156. What is the first term of an arithmetic progression of positive integers?
I. Sum of the squares of the first and second term is 116
II. The fifth term is divisible by 7.

157. Navni is three times as efficient as Avantika. In how many days can Avantika alone do the whole work?
I. Both of them together can complete the work in 15 days.
II. Navni alone can do the whole work in 20 days.

158. There are 450 boxes to load on a truck. A and B working independently but at the same time take 30 minutes to load the truck. How long should it take B working by himself to load the truck?
I. A loads twice as many boxes as B.
II. A would take 45 minutes by himself.

159. What is the rate of interest p.c.p.a?
I. Difference between compound interest and simple interest on an amount of Rs 10,000 for two years is Rs. 225.
II. The amount doubles itself on simple interest in $6\frac{2}{3}$ years.

160. Sanju works for 3 days and leaves the job. In how many days will Sanju alone finish the entire work?
I. Swamitra finishes the remaining work in 12 days.
II. Sanju and Swamitra together can finish the work in 6 days.

SECTION-E : Indian & Global Environment

161. The first Indian satellite was launched into space in 1975. What was it called?
(a) Aryabhatta (b) Rohini
(c) Insat-1A (d) IRS-1A

162. The 'Param' series of supercomputers was developed in India by which of the following institutions?
(a) Indian Institute of Science
(b) Centre for Development of Advance Computing
(c) Tata Institute of Fundamental Research
(d) Electronic Corporation of India

163. What type of electromagnetic radiation is used in the remote control of a television ?
(a) Infrared (b) Ultra-violet
(c) Visible (d) None of the above

164. Kisan Credit Cards are issued to -
(a) All the categories of farmers
(b) Persons engaged in animal husbandry
(c) Persons engaged in fisheries
(d) All of the above

165. In India, liquid funds are regulated by -
(a) Securities and Exchange Board of India
(b) Reserve Bank of India
(c) Association of Mutual Funds of India
(d) National Stock Exchange of India and Bombay Stock Exchange

166. Which one of the following is a direct tax?
(a) Sales tax (b) Excise duty
(c) Customs duty (d) Wealth tax

167. To which of the following sectors of the economy, the activity of agriculture and services belong to?
(a) Primary and Tertiary respectively
(b) Primary and Secondary respectively
(c) Tertiary and Secondary respectively
(d) Secondary and Quaternary respectively

168. Which of the following is true about Goods and Services Tax (GST) ?
(a) It is value added tax
(b) It will be levied on manufacture, sale and consumption
(c) It is an indirect tax
(d) All of the above

169. Which one of the following statements does not apply to the system of Subsidiary Alliance introduced by Lord Wellesley?
(a) To maintain a large standing army at other's expense
(b) To keep India safe from Napoleonic danger
(c) To secure a fixed income for the Company
(d) To establish British paramountcy over the Indian States

170. Increase in absolute and per capita real GNP do not connote a higher level of economic development, if -
(a) industrial output fails to keep pace with agricultural out put
(b) agricultural output fails to keep pace with industrial output
(c) poverty and unemployment increase
(d) imports grow faster than exports

171. The tropical deciduous plants special to the Deccan are -
(a) teak (b) shisam
(c) sandalwood (d) sal

172. The 'Kinnerasani Wildilife Sanctuary' is located in the Indian state of -
(a) Tamil Nadu (b) Telangana
(c) Kerala (d) Karnataka

173. Which Cup/Trophy is associated with the game of Hockey?
(a) Dhyanchand Trophy (b) Davis Cup
(c) Merdeka Cup (d) Wimbledon Trophy

174. In the context of elections in India, which one of the following is the correct full form of VVPAT?
(a) Voter Verifiable Poll Audit Trail
(b) Voter Verifying Paper Audit Trail
(c) Voter Verifiable Paper Audit Trail
(d) Voter Verifiable Paper Account Trail

175. Where is Indian Institute of Rice Research located?
(a) Hyderabad (b) Kolkata
(c) Mumbai (d) New Delhi

176. When is the International Earth Day celebrated?
(a) 20th April (b) 5th June
(c) 22nd April (d) 3rd March

177. Who authored the book, Planned Economy for India?
(a) M. Visvesvaraya (b) J. R. D. Tata
(c) G D. Birla (d) Pattabhi Sitaramayya

178. Food and Agriculture Organisation (FAO) is headquartered in which of the following countries ?
(a) Berlin, Germany (b) Vienna, Austria
(c) Rome, Italy (d) New York, USA

179. "Global Climate Risk Index" has been developed by -
(a) Greenpeace (b) Earthwatch
(c) Germanwatch (d) Conservation International

180. Khajuraho temples were built by -
(a) Guptas (b) Pratiharas
(c) Chandelas (d) Solankis

181. Value-added services means -.
(a) Giving full value for money
(b) Better value for higher price
(c) Costlier service
(d) Additional service

182. Which of the following terms is not covered under General insurance?
(a) Marine Insurance (b) Fine Insurance
(c) Motor Insurance (d) Life Insurance

183. "Sar utha ke jiyo" is the business tag line of -
(a) Bharti Axa (b) LIC
(c) Max Insurance (d) HDFC Life

184. Which of the following Bank is not a Public Sector Bank?
(a) IDBI Bank (b) State Bank Of India
(c) Bharatiya Mahila Bank (d) HDFC Bank

185. Which state has rolled out its Handicrafts Policy 2019 for creating a vibrant and sustainable handicraft sector in the state?
(a) Haryana (b) Odisha
(c) Bihar (d) Assam

186. Which Indian Personality was conferred with the Seoul Peace Prize in South Korea?
(a) Smt Sushma Swaraj (b) Shri Venkaiah Naidu
(c) Shri Ram Nath Kovind (d) Shri Narendra Modi

187. Global Aviation Summit 2019 will be held in _____ with the theme "Flying for all".
(a) Mumbai (b) Pune
(c) Kolkata (d) Thane

188. Who won the Gandhi Peace Prize for the year 2018?
(a) Akshaya Patra Foundation
(b) Shri Yohei Sasakawa
(c) Ekal Abhiyan Trust
(d) Vivekananda Kendra

189. How is an MNC defined?
(a) A MNC is a company that owns or controls production in more than one district in a country
(b) A MNC is a company that owns or controls production in more than one state in a country
(c) A MNC is a company that owns or controls production in more than one nation
(d) All of the above

190. World Health Organization declared the year 2019 as;
(a) Year of medical innovations
(b) Year of betterment of health and family welfare
(c) Year of action on preparedness for health emergencies
(d) Year of vaccination awareness

191. The 'Atal Setu' bridge named after former prime minister of India late Atal Bihari Bajpai, which is the third Cable bridge across river _____ in Panaji, Goa.
(a) Mandovi (b) Ravi
(c) Godavari (d) Narmada

192. Who became the first woman to co-pilot the indigenously made combat fighter jet "Tejas" in the Aero India 2019?
(a) PV Sindhu (b) Saina Nehwal
(c) Nirmala Sitharaman (d) Sushma Swaraj

193. Election Commission of India has developed a mobile app, for the 2019 Lok Sabha election. It was named as;
(a) ECI Authenticator Code
(b) cVIGIL
(c) SUVIDHA
(d) ENCORE

194. MITRA SHAKTI is a joint military exercise between India and which of the following country?
(a) Bangladesh (b) Sri Lanka
(c) Nepal (d) Afghanistan

195. Who among the following was honoured with Vyas Samman 2018?
(a) Leeladhar Jagudi (b) Manglesh Dabral
(c) Vinod Kumar Shukla (d) Kunwar Narayan

196. The total number of Judges of the International Court of Justice is
(a) 10 (b) 12 (c) 15 (d) 18

197. In the last one decade, which one among the following sectors has attracted the highest foreign direct investment inflows into India?
(a) Chemicals other than fertilizers
(b) Services sector
(c) Food processing
(d) Telecommunication

198. Gross domestic capital formation is defined as:
(a) flow of expenditure devoted to increased or maintaining of the capital stock
(b) expenditure incurred on physical assets only
(c) production exceeding demand
(d) net addition to stock after depreciation

199. The Board of Industrial and Financial Reconstruction (BIFR) came into existence in
(a) 1984 (b) 1986 (c) 1987 (d) 1989

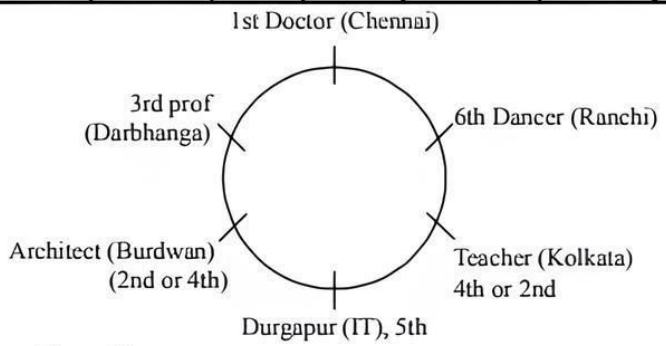
200. Which city police launched a Mobile App 'Digicop' to track the status of stolen two-wheelers and cell phones?
(a) Hyderabad (b) Chennai
(c) Bengaluru (d) Pune

HINTS & EXPLANATIONS

1. (c) The word **Cantankerous (Adjective)** means : bad tempered and always complaining.
Hence, the words **cantankerous** and quarrelsome are synonymous.
2. (c) The word **Derision (Noun)** means : ridicule; mockery; a strong feeling that somebody/something is ridiculous and not worth considering seriously.
3. (a) The word **Trite (Adjective)** means : dull and boring because it has been expressed so many times before; not original; banal; very ordinary and containing nothing that is interesting or important.
Hence, the words **trite** and **commonplace** are synonymous.
4. (b) Knack means a clever way of doing something.
5. (d) Pernicious means highly injurious or destructive.
6. (d) Opulence means wealthy.
7. (b) Idiom 'wet behind the ears' means: inexperienced, often because one is young.
8. (c) Idiom 'keep on open office' means: to have one's house in a state or condition in which visitors or guests are welcomed at any time.
9. (a) Here subject (tractor sales) is plural. Hence, ... tractor sales **have** seen ..... should be used.
10. (b) Delete 'form'
11. (c) See **a** revival.
12. (b) Preposition 'of'should be followed by noun object; 'environmental' is an adjective. 'environment' and forests.
13. (c) **CDAB** is the correct sequence.
Sentence (E) is the one which is the odd one out.
14. (d) The correct sequence is **DBCA**.
Sentence E is the odd one out.
15. (c) **CEDA** is the correct choice.
Sentence (B) is odd one out and is not a part of this coherent paragraph.
16. (a) DBAC is the correct choice.
Sentence E is the one which is the odd one out.
17. (c) EDAC is the correct sequence.
Sentence B is the odd one out.
18. (c) 19. (a) 20. (c)
21. (d) In paragraph 2 of the passage, it is mentioned that bank branch timings rarely coincide with off work hours of labour class.
22. (a) In paragraph 1, the last 5 lines explain this point. There is no mention of the other points in the passage. Hence, 1 is the correct answer.
23. (c) Paragraph 1 , line 3rd to 6th explain this aspect.
24. (d) All the points are covered in paragraph 1.
25. (a) The role of government is nowhere mentioned, the other 2 points are covered, hence (a) is the correct answer
26. (c) As per paragraph 1 A and C are correct, hence correct answer is (c)
27. (c) Paragraph 1 – last few lines
28. (a) Paragraph 2 , the 4th and 5th line explains this point.
29. (b)
30. (a) The passage does not talk of point B, hence A and C is correct (a)
31. (c) 32. (d) 33. (d) 34. (b) 35. (d)
36. (d) 37. (b) 38. (c)
39. (b) Only (c)
40. (b) The realization of the link between food security and political stability.

Sol. (41 - 44):

	Durgapur	Ranchi	Kolkata	Darbhanga	Burdwan	Chennai
Teacher	Xxxx	Xxxx	✓	Xxxx	Xxxx	Xxxx
Architect	Xxxx	Xxxx	Xxxx	Xxxx	✓	Xxxx
Doctor	Xxxx	Xxxx	Xxxx	Xxxx	Xxxx	✓
IT professional	✓	Xxxx	Xxxx	Xxxx	Xxxx	Xxxx
Dancer	Xxxx	✓	Xxxx	Xxxx	Xxxx	Xxxx
Professor	Xxxx	Xxxx	Xxxx	✓	Xxxx	Xxxx



41. (a) 42. (b) 43. (d) 44. (a)

Sol. (45 - 46):

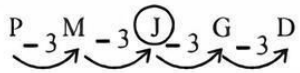
45. (a) According to the question
There are two married couples.
Mona is the mother-in-law of Sonalika.
Varun is the grand-father of Tarun.
Now as there are only three generations present.
Mona and Varun are married to each other.
Nuri is the grand daughter of Mona.
So Nuri and Tarun are siblings. From this we also conclude that Rakesh and Sonalika are married.

46. (c) This is given is the question itself that Tarun likes Punjabi food and supports Basketball. Hence option(c).

47. (d) The pattern of series is 'cabbac'

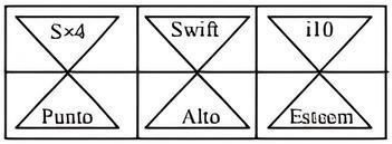
48. (a) The subscript in the terms follows the pattern: 2 _ 4 _ 6. Hence, the subscript in the missing terms is 3 and 5 respectively.
Also, the position of the subscript follows the pattern B _ C _ D. Hence, it should be with the letters C and B respectively in the missing terms.

49. (d) There is a gap of two letters between the given letters.

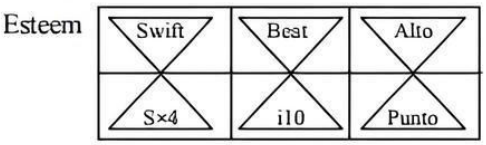


Difference between numbers = 3 × 1 = 3, 4 × 2 = 8, 5 × 3 = (15), 6 × 4 = 24, 7 × 5 = 35

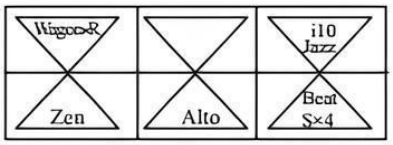
50. (c) Now, the arrangement would be as follows



51. (d) Now, the arrangement would be as below:



52. (d) Now the arrangement would be as below:



Now, the car that mokes out are esteem, SX4, *i*10 and Punto. among the given options, (d) is correct.

53. (b) Kamaljeet fulfilled all the given conditions except condition (3). As there is no further alternative condition to (3), Kamaljeet cannot be admitted.

54. (d) Gourav fulfilled all the given conditions except condition (2) as he is around 38 years old, the alternate condition to this is satisfied. Gourav should be admitted under sponsor quota.

55. (d) Let us use the '<' symbol to denote 'before'.
Given:
V < S ..... (i)
R < T < V < Y ..... (ii)
V < Q ..... (iii)
R < W, Z < Q ..... (iv)
From above we can infer that R or Z is the first product launched. Further R could only be the 1st or the second product. So (b) is wrong. From above (a) is wrong as Y has at least 3 products before it.
Again (c) is wrong as Q has R, T, V and Z before it.

56. (a) Z is the 7th product so Q is the 8th product and R is the 1st product launch.
So the situation is:

$$R \quad \underbrace{TV \quad S/Y}_{W} \quad ZQ$$

So clearly (b), (c) and (d) are false. T can be 2nd or 3rd. V can be 3rd or 4th.

57. (d) The situation is like this

$$\underbrace{RTV}_{Z} \quad Q \quad W/S/Y$$

(a), (b) and (c) can be true as Z can take position between 1 and 4. As RTV and Z are before Q. So W has to be after 5th launch.

58. (d) The situation becomes

$$ZR \quad \underbrace{TV \quad S/Y/Q}_{W}$$

From above it is clear that only (d) is possible as Z is the 1st launch.

59. (d) The situation is

$$R \quad \underbrace{TV \quad \overbrace{S/Y}^{Z}/Q}_{W}$$

R is the 1st launch.
T can be 2nd or 3rd launch.
Q can take position from 5th to 8th as R, T, V and Z have to be before.
V can be 3rd or 4th launch.

60. (a,c) April 20ab has exactly four Mondays and four Fridays. We know April has 30 days. For four Mondays and four Fridays a maximum of 4 weeks can be accomodated. So still 2 days are left. These can be Saturday and Sunday or Wednesday and Thursday or Tuesday and Wednesday. So the 1st of April can be Saturday or Wednesday.

61. (b) 62. (c)

Sol. (63 – 66):

Let us collate the available information in a table

Day	Teacher	Time	Subject
Monday	(Singh)		7.00
Wednesday	Chatterjee	(7.10)	(Prob)
Thursday	(Singh)		
Friday	Singh		Set

* The circle indicates exclusion.

As Mr. Singh can not teach on Monday and Thursday, so he teaches on Friday.

Mr. Banerjee can teach either on Monday or on Thursday. As he started his class 5 minutes later than the probability class (possible only on Monday/Thursday) so he has to teach on Thursday as the Monday class started at 7.00 a.m. Hence probability is taught on Monday and the Thursday class begins at 7.05 a.m.

Also the Friday class has to start at 7.10 and Wednesday class at 7.20 as Wednesday's class doesn't start at 7.10.

As Wednesday's class starts at 7.20, so calculus is taught on that day.

The final table becomes :

Day	Teacher	Time	Subject
Monday	Dutta	7.00	Probability
Wednesday	Chatterjee	7.20	Calculus
Thursday	Banerjee	7.05	R & P
Friday	Singh	7.10	Set Theory

63. (d) As is clear from above table.

64. (a) Probability was taught by Dutta on Monday.

65. (d) The Wednesday's class started at 7.20 and the topic was calculus.

66. (d) As is clear from above table.

Sol. (67 - 68):

These questions are based on the binary system as in binary system 3 is written as 11 (& &) and 4 is written as 100 (& @@)

67. (a) Average of $(10100)_2$ and $(1010)_2$

$$\text{implies } \frac{20+10}{2}=15$$

$(15)_9=(1111)_2=\&\,\&\,\&\,\&$

68. (b) HCF of 1010, 1111, 10010

implies the HCF of 10, 15, 18 = 1 = &

69. (c) If the given statements are true then more lawyers will advertise their services if the restriction against advertisements that do not specify fee arrangements are removed.

Hence correct option is (c).

70. (b) The bumper crop has led to the large distribution of food grain by the government.

71. (c) Both the statement (I) and (II) are independent causes because (I) happened so that students could see more of the world.

(II) happened so that the school may attend to other important tasks. There may be different reasons for them.

72. (d) Statement (I) has happened because of increased supply of fruits.

Statement (II) has happened because of decreased supply of food grains.

Both are the effects of independent causes

73. (a) (I) is the cause and (II) is the effect. the fear of rain has led to the tournament being called off.

74. (c) Clearly both the assumptions are implicit in the statement.

If there are sufficient number of passengers, the other private airlines may also increase the frequency of daily flights. The airline decided to increase the frequency of daily flights assuming that there are adequate passenger load.

75. (b) Only assumption II is implicit in the statement. If the management of the organisation has organised picnic for its employees, it would earmark adequate funds for picnic. Again, it is not prudent to assume that the management of the organisation would not welcome the employees with their family at the picnic.

76. (a) Only assumption I is implicit in the statement. The institute increased the fees assuming that good number of students will still join the courses. It is mentioned in the statement that the institute is reputed. Therefore, we can assume that students will still prefer the institute of repute despite hike in fees.

77. (d) None of the assumptions is implicit in hte statement. It is mentioned in the statement that many residents of the locality, not all residents, decided not to allend the function. This does not constitute the strong reason for cancellation of function. Assumption II is a long drawn conclusion.

78. (a) Both argument (A) and (B) are strong. Which clearly show the importance of irrigation nad environmental consequences of reducing groundwater level. Argument (c) is not strong.

79. (b) This situation can not be compromised, so action I does not follow. Action II follows because Government must generate more electricity to meet the demand of North India.

80. (b) For improvement of Healthcare infrastructure of India, incentive should be given to private players. Hence, only action II is the right course of action.

81. (b) $19200-4800=14400$

$$\text{Now, } 14400+\frac{14400\times12\times5}{100\times12}$$

$$= x + \left(x + \frac{x \times 12 \times 1}{100 \times 12}\right) + \left(x + \frac{x \times 12 \times 2}{100 \times 12}\right)$$

$$+ \left(x + \frac{x \times 12 \times 3}{100 \times 12}\right) + \left(x + \frac{x \times 12 \times 4}{x \times 12}\right)$$

$$\Rightarrow 15120 = 5x + \left(\frac{x}{100} + \frac{2x}{100} + \frac{3x}{100} + \frac{4x}{100}\right)$$

$$\Rightarrow 15120 = 5x + \frac{x}{100}(1+2+3+4)$$

$$\Rightarrow 15120 = 5x + \frac{x}{10} \Rightarrow 51x = 151200$$

$$\Rightarrow x = \frac{151200}{51} = 2965 \text{ (approx)}$$

82. (d) Let C.P. = 100, then M.P. = $100 + x$

$$\text{S.P.} = (100+x) - \frac{2x}{300}(100+x) = 100 + 4$$

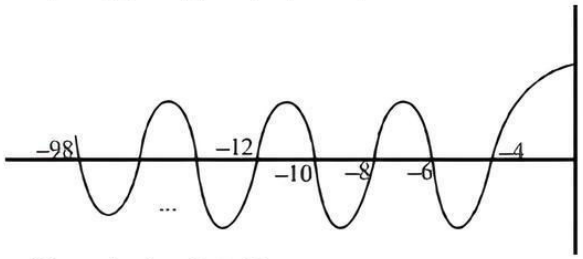
$$\Rightarrow x^2 - 50x + 600 = 0$$

$$\Rightarrow x = 20, 30$$

$$\Rightarrow \frac{x}{2} = 10, 15$$

83. (d) For $f(x) = 0$

i.e. $(x+4)(x+6)(x+8)\ldots(x+98) = 0$



$-98 = -4 + (n-1)(-2)$

$\Rightarrow -98 = -4 - 2n + 2$

$\Rightarrow 2n = 98 \Rightarrow n = 48$

For $f(x) < 0$ and $x \in I$

$$\text{Required number of integer} = \frac{48}{2} = 24$$

84. (b) Any number raised to power by the multiple of 4 gives the numbers whose units places are same.

$\therefore$ We divide the powers 63 and 85 by 4.

$$\Rightarrow \frac{63}{4} \Rightarrow \text{Quotent} = 15, \text{Remainder} = 3$$

$$\frac{85}{4} \Rightarrow Q = 21, R = 1$$

$\therefore$ X and Y are such numbers which when raised to power by 3 and 1 respectively give same units digits numbers.

$$\Rightarrow X^3 = 2^3 = 8 \text{ or } X^3 = 3^3 = 27$$

$$Y^1 = 8^1 = 8 \text{ or } Y^1 = 7^1 = 7$$

$\therefore X + Y = 8 + 2 = 10$ or $X + Y = 7 + 3 = 10$.

85. (b) Profit = 5%

5% of CP = ₹50

CP = ₹ 1000

Now, Loss% = 10%

Loss = ₹ 100

$$\text{Required \%} = \frac{100}{50} \times 100 = 200\%$$

86. (a) Let initial employee be 14a and final employee be 12a similarly initial wage is 16b and final wage be 18b

Total initial wage = 14a × 16b = 224ab, total final wage = 12a × 18b = 216ab

So clearly wages decreases and ratio = 224ab: 216ab = 28:27

87. (c) Ratio in which the profit will divide – 23:15. Let the profit be P

$$\text{Now, } \left[\left(\frac{23}{38}\right) - \left(\frac{15}{38}\right)\right] \times \left(\frac{60}{100}\right) \times P = 500$$

P = 3958.34

88. (c) Total possible outcomes = $^{17}C_5$

$$= \frac{17 \times 16 \times 15 \times 14 \times 13}{1 \times 2 \times 3 \times 4 \times 5} = 6188$$

Total favourable outcomes = $^8C_2 \times {}^4C_1 \times {}^5C_2$

$$= \frac{8 \times 7}{1 \times 2} \times 4 \times \frac{5 \times 4}{1 \times 2} = 28 \times 4 \times 10 = 1120$$

$$\text{Required probability} = \frac{1120}{6188} = \frac{280}{1547}$$

89. (b) Pipe A's work in % = 100/10 = 10%

Pipe B's work in % = 100/20 = 5%

Pipe C's work in % = 100/40 = 2.5%

All of them are opened for 2 hours + after 2 hours, tap C is closed + After the 4th hour, tap B is also closed = 100

$\Rightarrow (10 + 5 + 2.5) \times 2 + (10 + 5) \times 2 +$ work done by tap A alone = 100

$\Rightarrow 35 + 30 +$ work by tap A alone = 100

$\Rightarrow$ work by tap A alone = 100 – 65 = 35%

90. (b) Time taken by Sukriti to travel 5 km

= 5 × (5 mins and 50 sec)

= 29 mins and 10 sec.

Distance covered by Saloni in 29 min and 10 sec

$$= \frac{1 \text{ km}}{6\text{min and } 4 \text{ Sec}} \times 29 \text{ min and } 10 \text{ sec}$$

$$= \frac{1\text{ km}}{364} \times 1750 = 4.808\text{ km}$$

So, Sukriti defeats Saloni by 200 m in a 5 km race.

91. (b) Let x, y and z have their own funds ₹ x, ₹ y and ₹ z respectively.

Then, y received a fund of 10% of its own fund from x.

Then, y total fund $= y + \frac{10}{100}y = 1.1y$.

Donation given by company z = ₹ 10,000

Then, $z \times \frac{5}{100} = 10000$

$z = 2,00,000$

Now, from question,

$1.1y = 2z$

$1.1y = 2 \times 2,00,000$

$y = \frac{4,00,000}{1.1} =$ ₹ 363636.36.

Donation given by $y = y \times \frac{5}{100}$

$= 363636.36 \times \frac{5}{100}$

$=$ ₹ 18181.18 $\approx$ ₹ 18,000

92. (b) $F(x) = \frac{1}{1+x}$ at $x = 5 \Rightarrow F(5) = \frac{1}{6}$

$F[f\{f(x)\}],\ x = 5$

$\Rightarrow f\left[f\left\{\frac{1}{6}\right\}\right] = f\left(\frac{6}{7}\right) = \frac{7}{13}$

Alternate Method:

$$f\{f(x)\} = \frac{1}{1+\frac{1}{1+x}} = \frac{1+x}{2+x}$$

$$f[f\{f(x)\}] = \frac{1}{1+\frac{1+x}{2+x}} = \frac{2+x}{3+2x}$$

At $x = 5$,

$$f[f\{f(5)\}] = \frac{2+5}{3+2\times 5} = \frac{7}{13}$$

93. (a)

	A	B	
X	5%	10%	≥ 7 g
Y	10%	6%	≥ 7 g

$\frac{5}{100}A + \frac{10}{100}B \geq 7$

$5A + 10B \geq 700$ ...(i)

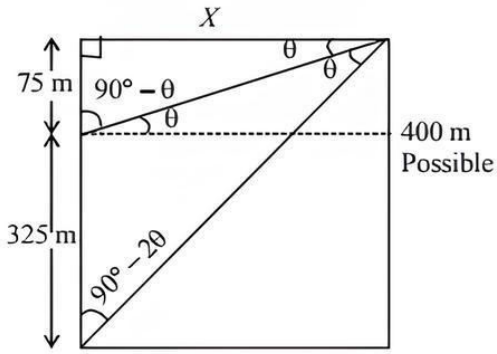
$10A + 6B \geq 700$ ...(ii)

On solving, $A = 40$, $B = 50$

For minimum cost,

Total cost $= 10.5 \times 40 + 7.8 \times 50 = 810$ g.

94. (b)



$\frac{75}{x} = \tan\theta$

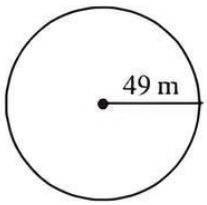
$\Rightarrow \frac{400}{x} = \tan 2\theta = \frac{2\tan\theta}{1-\tan^2\theta}$

$\Rightarrow \frac{400}{x} = \frac{2\times\frac{75}{x}}{1-\left(\frac{75}{x}\right)^2}$

$\Rightarrow \frac{400}{x} = \frac{\frac{150}{x}}{1-\frac{5625}{x^2}}$

On solving, $x^2 = 9000$, $x = 30\sqrt{10}$ m

95. (a)



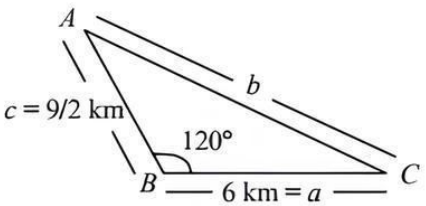
$C = 2\pi r = 2\times\frac{22}{7}\times 49 = 308$ m

Speed $= \frac{308}{148} = 2.08$ m/min.

Time for hexagon $= \frac{54\times 6}{2.08} = 155.76$ mins

Extra time $= 155.76 - 148 \approx 07.70$.

96. (c)



$$\cos\theta = \frac{a^2 + c^2 - b^2}{2ac}$$

$$\cos 120 = \frac{6^2 + \left(\frac{9}{2}\right)^2 - b^2}{2 \times 4.5 \times 6}$$

$b \approx 9.12$ km

97. (b) Since PQ and PT are tangents on circle so

$\angle PQO = \angle PTO = 90°$

In quadrilateral $PQOT$,

$\angle PQO + \angle PTO + \angle QOT + \angle TPQ = 360°$

$90° + 90° + \angle QOT + 55° = 360°$

$\angle QOT = 125°$

Since AB touches the circle hence OA and OB are the angle bisector of $\angle QOS$ and $\angle TOS$ respectively.

So, $\angle AOB = \frac{1}{2}\angle QOT = \frac{125}{2} = 62.5°$.

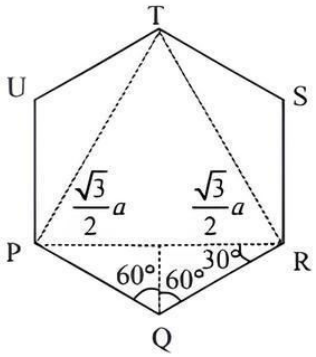
98. (a) If I do 2 units per day, my roommate will do 1 unit per day.

Together we do 3 units per day.

Since, we take 30 days to finish the complete work, so total work must be $30 \times 3 = 90$ units. Now working @ 2 units/day, I will take 45 days for 90 units and my roommate will take 90 days.

99. (b) Let the side of hexagon PQRSTU is 'a'

$\therefore$ Area of hexagon $= 6 \times \frac{\sqrt{3}}{4} \times a^2$



The side of triangle PRT $= \sqrt{3}a$

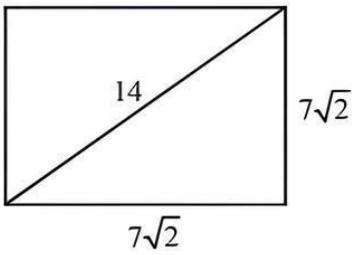
$\therefore$ Area of $\Delta PRT = \frac{\sqrt{3}}{4} \times (\sqrt{3}a)^2 = \frac{3\sqrt{3}}{4}a^2$.

$\therefore$ Reqd. ratio is $\frac{3\sqrt{3}}{4}a^2 \times \frac{4}{6\sqrt{3}a^2} = \frac{3}{6} = \frac{1}{2} = 0.5$

100. (a) The Volume of Cylinder $= 15 \times 49\pi$

The rectangle solid is placed in cylinder such that each of the corners of solid is tangent to walls of cylinder. Hence the diameter of cylinder is equal to diagonal of the square base.

$\therefore$ As the diameter of cylinder is 14, so diagonal of square is 14 and hence side of square is $7\sqrt{2}$.



Volume of rectangular solid

$= 7\sqrt{2} \times 7\sqrt{2} \times 12 = 98 \times 12$

$\therefore$ Volume of liquid $= 15 \times 49\pi - 98 \times 12$

$= 147\,(5\pi - 8)$

101. (c) Number of ways that two batchmates are not sitting next to each other = total number of ways in which 10 Students can sit – the number of ways in which two batchmates sit together

$= 10! - 9! \times 2 = 10 \times 9! - 9! \times 2$

$= 9! \times 8 = 2903040$

102. (a)

	Airtel	Vodafone
Prepaid:	79	100
Postpaid:	1.12×79 = 88.48	0.85×100 = 85

$\therefore$ Required percentage $= \frac{88.48 - 85}{85} \times 100$

$= \frac{3.48}{85} \times 100 = 4.09\%$ more

The closet option is option (a)

103. (d) Let n be the number of members who attended the board meeting

Number of handshakes $= {}^nC_2 = 78$

$\frac{n(n-1)}{2} = 78$

Solving this $n = 13$

104. (c) Length of arc = 10π

$$\frac{\theta}{360} \times 2\pi r = 10\pi$$

$$\frac{90}{360} \times 2\pi r = 10\pi$$

$r = 20\pi$ ..... (1)

Now, Area of sector = $\frac{\theta}{360} \times \pi r^2$

$= \frac{90}{360} \times \pi \times 400 = 100\pi$

105. (b) Let Morning speed = 10 kmph

∴ Evening speed = 15 kmph

and morning time = 1 hour

Evening time = 1.5 hour

∴ Distance in the morning = 10 × 1 = 10 km

Distance in the evening = 15 × 1.5 = 22.5 km

$$\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$$

$$\text{For entire journey} = \frac{10 + 22.5}{1 + 1.5} = \frac{32.5}{2.5} = 13 \text{ km} \quad ...(1)$$

$$\text{Average speed in morning} = \frac{10}{1} = 10 \text{ kmph} \quad .....(2)$$

Clearly average speed is 30% greater.

106. (d) Let his total sales are of x and he earns ₹6,000 as commission for ₹1,00,000.

and, Remaining amount = $x - 100000$

$$\text{Commission on this amount} = \frac{5}{100}(x - 100000)$$

∴ Total Commission = $6000 + .05(x - 100000)$

$= 0.05x + 1000$

∴ $x - .05x - 1000 = 265000$

Solving, x = 280000

107. (a)

P	Q
10 kg	45 kg
Silver 4.5 kg	0.3×45 = 13.5 kg
Aluminium 5.5	
Copper –	0.35 × 45 = 15.75 kg

∴ In the alloy of 55 kg

Silver = 4.5 + 13.5 kg = 18 kg

Copper = 15.75 kg.

$$\% \text{ of Silver} = \frac{18}{55} \times 100 = 33\%$$

$$\% \text{ of Copper} = \frac{15.75}{55} \times 100 \approx 29\%$$

108. (a) Probability that the Student will Complete the first year = Probability thant he passes first trimester × Probability that he passes 1st semester and is promoted to the second year = 0.92 × 0.87 ≈ 0.8 approx

109. (c) Here, 8 male and 7 females. Out of them 3 males and 4 female to be selected

no. of ways in which total committee formed

$= {}^8C_3 \times {}^7C_4$

$= \frac{8 \times 7 \times 6}{3 \times 2} \times \frac{7 \times 6 \times 5}{3 \times 2}$

$= 56 \times 35 = 1960$

Now, committee formed without Raj and Rani

Selection of both Raj and Rani can happen in

${}^7C_2 \times {}^6C_3 = 21 \times 20 = 420$ ways

∴ Required number of ways = 1960 – 420 = 1540

So option (c) is correct

110. (c) Out of 8 consonants, 4 consonants can be selected in ${}^8C_4 = 70$ ways.

Out of 5 vowels, 3 vowels can be selected in ${}^5C_3 = 10$ ways.

These 7 selected letters can be arranged among themselves in 7! ways.

Hence, total number of required words = 70 × 10 × 7! = 3528000

111. (b) As each of the three equal parts of the rod further cut into 12, 18 and 32 equal parts, therefore, length of each of the three equal part of the rod will be equal to LCM of 12, 18 and 32.

LCM of 12, 18 and 32 = 288.

Total length = 288 × 3 = 864

112. (c) Since the question mention 7 consecutive natural numbers, the first 7 natural numbers can also be considered.

The first 7 natural numbers are (1, 2, 3, 4, 5, 6, 7) and their average is 4.

When the next 3 numbers i.e., 8, 9 and 10 are added, the new average is 5.5.

∴ Increases in average = 5.5 – 4 = 1.5

113. (c) If we multiply by 10^n the decimal moves to n places right, where n is an integer.

We have to find least value of k for which 0.0010101×10^k is greater than 1000.

We can see that if we put k = 6 then the decimal moves 6 places right and 1010.1 is greater than 1000.

Hence, option (c) is correct.

114. (a) Let the work to be done be 1 unit

12 men can complete 1 unit work in 10 days

$$\text{Work done by 12 men in 1 day} = \frac{1}{10}$$

Work done by 1 men in 1 day $= \frac{1}{12\times10}$

Similarly,

Work done by 20 women in 12 days = 1

Work done by 1 women in 1 day $= \frac{1}{20\times12}$

Till 9 days 8 men and 4 women are doing the work.

Work done in 9 days by 8 men and 4 women

$$\left\{\frac{1}{12\times10}\times8+\frac{1}{12\times20}\times4\right\}\times9=\frac{3}{4}$$

Amount of work left = (1 – 3/4) = 1/4

After 9 days 10 women joins. So, total women doing the job will now be 14.

Now, $\left(\frac{1}{4}\right)$ work has to be done by 8 men and 14 women

Let they take x days to complete (1/4) work

$$\left\{\frac{1}{12\times10}\times8+\frac{1}{20\times12}\times14\right\}\times x=\frac{1}{4}$$

x = 2

Hence, option (a) is correct.

115. (a) Let C.P. of one soap = ₹ x

C.P. of one toothpaste = ₹ y

$\Rightarrow$ S.P. of one soap = $₹\frac{115x}{100}$

S.P. of one toothpaste = ₹ (y + 20)

and C.P. of one toothpaste = 60% C.P. of one soap

$$y = 0.6x$$

Profit on 75% of soap (i.e. 15 soap) and 8 toothpaste = ₹ 385

$$\Rightarrow \frac{115x}{100}\times15+8\times(y+20)-(15x+8y)=385$$

$\Rightarrow$ x = ₹ 100

y = ₹ 60 = 0.6 x

C.P. of 20 soaps and 12 toothpaste = 20 × 100 + 12 × 60

= ₹ 2720

S.P. of 15 soaps and 8 toothpaste

= (15 × 100 + 8 × 60) + 385 = ₹ 2365

and he get no return on unsold items.

Total S.P. = ₹ 2365

Loss = C.P. – S.P.

= ₹ (2720 – 2365) = ₹ 355

Hence, option (a) is correct.

116. (c) The part of the tank filled by A and B in first two hours = 3/4 (1/5 + 1/10) + (1/5 + 1/10)

The part of the tank filled by C in first two hours

= 2(2/3) (1/15)

Remaining part of the tank to be filled = 139/360

In 1 hour, all the three pipes together will fill 11/30

Hence the time taken to fill the remaining tank

= (139/360) (30/11) = 1.0530 hours.

Hence the total time taken to fill the tank is 3.05 hours.

117. (b) We know that Arithmatic mean of (a, b) ≥ Geometric mean of m(a, b) AM $(3^{\sin x}, 3^{\cos x}) \geq$ GM $(3^{\sin x}, 3^{\cos x})$

$$\text{As } \frac{3^{\sin x}+3^{\cos x}}{2} \geq \sqrt{3^{\sin x}.3^{\cos x}}$$

$$\geq 2\sqrt{3^{\sin x}.3^{\cos x}} \geq 2\sqrt{3^{-\sqrt{2}}}$$

($\because$ The min value of $\sin x + \cos x$ is $-\sqrt{2}$).

$$\therefore 3^{\sin x}+3^{\cos x} \geq 2\times3^{\frac{-\sqrt{2}}{2}} \geq 2\times3^{-\frac{1}{\sqrt{2}}}$$

118. (a) Let the share of the younger son be Rs. x. Then the original share of the elder son be Rs. (18750 – x). The age of younger and elder son become 30 years after 20 years and 17 years respectively. Since each of them will receive the same amount at the age of 30 years

$$\therefore x\left(1+\frac{3}{100}\right)^{20}=(18750-x)\left(1+\frac{3}{100}\right)^{17}$$

or $x(1.03)^3 = (18750 - x)$

or 1.092727 x = 18750 – x

$\Rightarrow$ 2.092727 x = 18750

$\Rightarrow$ x = Rs. 8959.60

119. (b) The two trains start simultaneously. Let they meet after t hours. The train that has covered 60 km more must be the faster of the two.

Hence $60 (21 - 16) \times t$

$\Rightarrow t = 12$

Since they are travelling towards each other, total distance is the sum of the distances traveled by the two trains individually.

$\therefore$ Total distance = 16 × 12 + 21 × 12 = 444 km.

120. (d) Both filling pipes together fill the tank in

$$\frac{14\times16}{14+16}=\frac{224}{30}=\frac{112}{15} \text{ hours}$$

Due to leakage, it takes 32 minutes extra.

i.e., $\frac{18}{15}$ hours extra. Let leakage pipe will empty the tank in x hours

According to the question,

$$\frac{1}{16}+\frac{1}{14}-\frac{1}{x}=\frac{1}{\frac{112}{15}+\frac{8}{15}}$$

$\therefore x = 112$ hours

121. (c) Total number of mobiles sold in the month of July

$= 45000 \times \frac{17}{100} = 7650$

Mobiles phones sold by Company B in the month of July $= 7650 \times \frac{7}{15} = 3570$

Total numbers of mobile phones sold in the month of December $= 45000 \times \frac{16}{100} = 7200$

Mobile phones sold by Company B in the month of December $= 7200 \times \frac{9}{16} = 4050$

$\therefore$ Required ratio

$= \frac{3570}{4050} = \frac{357}{405} = \frac{119}{135} = 119:135$

122. (c) Number of mobile phones sold in the month of November $= 45000 \times \frac{12}{100} = 5400$

Number of mobile phones sold by Company A in the month of November $= 5400 \times \frac{7}{15} = 2520$

$\therefore$ Number of mobile phones sold without discount in the month of November by Company A

$= 2520 \times \frac{65}{100} = 2520 \times 0.65 = 1638$

123. (d) Number of mobile phones sold in the month of October

$= 45000 \times \frac{8}{100} = 3600$

$\therefore$ Number of mobile phones sold by Company B in the month of October $= 3600 \times \frac{5}{12} = 1500$

$\therefore$ Total profit earned by Company B in the month of October $= 1500 \times 433 = 649500$

124. (d) Number of mobile phones sold in the month of July

$= 45000 \times \frac{17}{100} = 7650$

Number of mobile phones sold by Company A in the month of July $= 7650 \times \frac{8}{15} = 4080$

Number of mobile phones sold in the month of December $= 45000 \times \frac{16}{100} = 7200$

Number of mobile phones sold by Company A in the month of December $= 7200 \times \frac{7}{16} = 3150$

$\therefore$ Required $\% = \frac{4080}{3150} \times 100 = 129.52 \approx 130$

125. (a) Number of mobile phones sold in the month of August

$= \frac{22}{100} \times 45000 = 9900$

Number of mobile phones sold in the month of September $= \frac{25}{100} \times 45000 = \frac{1}{4} \times 45000 = 11250$

Number of mobile phones sold by Company B in the month of August $= 9900 \times \frac{5}{9} = 5500$

Number of mobile phones sold by Company B in September $= 11250 \times \frac{2}{5} = 4500$

Total number of mobile phones sold in August and September by Company B $= 5500 + 4500 = 10000$

126. (c) Average

$= \frac{1}{6} \times [5+10+25+20+25+15] \times 1000$

$= \frac{100000}{6} = 16666\frac{2}{3}$

127. (d) Required $\% = \frac{55}{60} \times 100 = 91.67\%$

128. (a) Required $\% = \frac{10}{55} \times 100 = 18\%(\text{approx.})$

129. (b) Required ratio $= 15 : 10 = 3 : 2$

130. (d) Required no. of people $= (25 + 15) \times 1000 = 40000$

131. (b) Speed of vehicle A on day 1 = 832/16 = 52kmph
Speed of vehicle A on day 2 = 864/16 = 54kmph
Speed of vehicle B on day 1 = 516/12 = 43kmph
Speed of vehicle B on day 2 = 774/18 = 43kmph
Speed of vehicle C on day 1 = 693/11 = 63kmph
Speed of vehicle C on day 2 = 810/18 = 45kmph
Speed of vehicle D on day 1 = 552/12 = 46kmph
Speed of vehicle D on day 2 = 765/15 = 51kmph
Vehicle B travelled at the same speed on both the days

132. (b) Speed of vehicle A on day 1 = 832/16 = 52kmph
Speed of vehicle C on day 1 = 693/11 = 63kmph
Difference = 63-52 = 11kmph

133. (a) Speed of vehicle C on day 2 = 810/18 = 45kmph
Speed of vehicle C on day 2 = 45 × (5/18) = 12.5 m/s

134. (a) Percentage = (636/703)*100 = 90%

135. (b) Speed of vehicle D on day 2 = 51kmph
Speed of vehicle E on day 2 = 39kmph
Ratio = [Speed of vehicle D on day 2/Speed of vehicle E on day 2] = 51/39 = 17:13

136. (b) Let speed of first train be x km/h and speed of second train be $x \times \frac{150}{100}$ km/h

$$X = x \times \frac{5}{18} \times 20 = \frac{50}{9}x = 5.55x$$

$$Y = \frac{3x}{2} \times \frac{5}{18} \times 15 = \frac{225}{36}x = \frac{25x}{4} = 6.25x$$

Hence, X < Y

137. (b) $X = \frac{50}{10} = 5 m/s$

$$Y = \frac{200-40}{30} = \frac{160}{30} = 5.33 m/s$$

Hence, X < Y

138. (d) Here, nothing is given about speed or length of second train.
Hence, relation can't be established between X and Y

139. (a) Let lengths of trains be 4x and 5x respectively.

$$X = \frac{4x}{20} \times \frac{18}{5} = 0.72x \qquad Y = \frac{5x}{30} \times \frac{18}{5} = 0.60x$$

Hence, X > Y

140. (c) $X = 9 \times \frac{5}{18} \times 60 = 150 m$

$$Y = 60 \times \frac{5}{18} \times 18 - 150 = 150 m$$

Hence, X = Y

141. (c) Total amount paid by Dev in June for all commodities = 123 + 150 + 324 + 134 = ₹731

142. (c) Average electricity bill paid by Manu in all five months

$$= \frac{315+135+98+116+131}{5} = \frac{795}{5} = ₹159$$

143. (a) Mobile phone bill paid by Ravi in May = ₹143
Loundry bill paid by Dev in March = ₹323
Difference = 323 – 143 = ₹180

144. (d)

145. (a) Electricity bill paid by Manu in April = 135
Mobile bill paid by Ravi in June = 245
Ratio = 135 : 245 = 27 : 49

Sol. (146-150)

	Monday	Tuesday	Wednesday	Thursday	Friday
Tata	190	150	250	150	190
Renault	160	220	200	180	140
Maruti	200	200	300	250	200
	540	570	750	580	520

146. (b) Required ratio = $\frac{540}{750} = 18:25$

147. (a) Total number of cars produced by Renault from monday to Friday = 900

148. (d) Required average = $\frac{1150}{5} = 230$

149. (c) No. of cars produced on Tuesday and Thursday is same i.e. 150.

150. (c) Maximum number of cars produced = 750, on Wednesday.

151. (d) Total number of vehicles produced by P in 2013, 2014 and 2016 = 690
Produced by Q in year 2014, 2015 and 2016 = 510
∴ Difference = 690 – 510 = 180 thousands

152. (b) Average Number of vehicles by company

$$Q = \frac{130+100+160+120+180+210}{6}$$

$$= \frac{900}{6} = 150 \text{ thousands}$$

153. (c) Total number of vehicles in 2013 = 380
Total number of vehicles produced in 2014 = 280
Percentage Decrease

$$= \frac{100}{380} \times 100 = \frac{500}{19} = 26\frac{6}{19}\%$$

154. (a) Total vehicles produced by P in 2015
= 240 thousand
Defective = 15 thousands
Non - defective = 225 thousands
Total vehicles produced by Q in 2016 = 210 thousand
Defectives = 10000
Non-detective = 200 thousand
∴ Required Ratio = 225 : 200 = 9 : 8

155. (a) Number of vehicles produced by P in the year 2012 = 190

$$\text{Number of vehicles produced in 2017} = 190 \times \frac{130}{100} = 247$$

156. (d) (II) is useless
(I) shows that the two integers on squaring add up to $116 < 11^2$ which means the integers are less than 10.
We further find that the nos. are 10 and 4.

157. (c) Let Navni takes to finish the work = x days
Then Avantika takes to finish the work = 3x days.

$$(I) \Rightarrow \frac{1}{x} + \frac{1}{3x} = \frac{1}{15}$$

Obviously, x can be determined.

$\therefore$ statement (I) alone is sufficient to answer the question.

(II) $\Rightarrow x = 20$ days and since, Avantika takes time $= 3x$ days

Hence, statement (II) alone is sufficient to answer the question.

158. (c) Let B alone whole work in x minutes

$\therefore$ in one minute, work done by B $= \frac{1}{x}$th part of whole work.

$\therefore$ in 30 minutes, work done by B $= \frac{30}{x}$th part of whole work.

(I) $\Rightarrow \frac{30}{x} + \frac{60}{x} = 1$

$\therefore$ Statement (I) alone is sufficient.

(II) $\Rightarrow$ In 45 min., work done by A = 1

$\therefore$ in 30 minutes, work done by A $= \frac{30}{45}$th part of whole work $= \frac{2}{3}$th part of whole work.

Now, $\frac{2}{3} + \frac{30}{x} = 1$

Hence, statement (II) alone is sufficient to answer the question.

159. (c) Let rate of interest = r % per year

(I) $\Rightarrow$ Difference between S.I. and C.I. $= P \times \left(\frac{r}{100}\right)^2$

Hence, r can be determined by using statement (I) alone.

(II) $\Rightarrow$ S.I. = Amount = P

and S.I. $= \frac{p \times r \times t}{100}$

$\therefore$ r can be determined by using statement (II) alone.

160. (a) Let whole work done by Sanju in x days.

$\therefore$ work done by Sanju in 3 days $= \frac{3}{x}$th part of whole work.

Remaining work $= 1 - \frac{3}{x} = \frac{x-3}{x}$

(I) $\Rightarrow$ Swamitra's work in 12 days $= \frac{x-3}{x}$

$\Rightarrow$ Swamitra's one day work $= \frac{x-3}{12x}$

(II) $\Rightarrow \frac{1}{x} + \frac{x-3}{12x} = \frac{1}{6}$

Hence, both statements together are sufficient to answer the question.

161. (a) Aryabhatta, was the India's first satellite, was launched by India on 19 April 1975 from Kapustin Yar, a Russian rocket launch and development site in Astrakhan Oblast using a Kosmos-3M launch vehicle.

162. (b) PARAM is a series of supercomputers designed and assembled by the Centre for Development of Advanced Computing (C-DAC) in Pune, India.

163. (a) 164. (d)

165. (a) The Securities and Exchange Board of India (SEBI) is the regulator for the securities market in India. It was established in 1988. It became an autonomous body by The Government of India on 12 May 1992 and given statutory powers in 1992 with SEBI Act 1992.

166. (d) Direct Taxes are taxes that are directly paid to the government by the taxpayer. It is a tax applied on individuals and organizations directly by the government e.g. income tax, corporation tax, wealth tax etc.

167. (a)

168. (d) GST is one indirect tax for the whole nation, which will make India one unified common market. GST is a single tax on the supply of goods and services. The Goods and Service Tax Act was passed in the Parliament on 29th March 2017. The Act came into effect on 1st July 2017.

169. (c) The Subsidiary Alliance System was "Non-Intervention Policy" used by Lord Wellesley who was the Governor-General (1798-1805) to establish British Empire in India. According to this system, every ruler in India had to accept to pay a subsidy to the British for the maintenance of British army. In return, British would protect them from their enemies which gave British enormous expansion. Subsidiary Alliance introduced by Lord Wellesley was nothing to do with Napoleon danger.

170. (c) 171. (c)

172. (b) The Kinnerasani Wildlife Sanctuary is located in Khammam district of Telangana, India. The wildlife sanctuary covers an area of 635.4 square kilometers and this plentiful land serves as the native land for several endangered species. This sanctuary got its name after the river Kinnerasani.

173. (a)

174. (c) The Voter Verifiable Paper Audit Trail (VVPAT) is a method of providing feedback to voters using a ballot less voting system. VVPAT is a specific machine that is used in elections to verify that the citizen's vote has been correctly placed.

175. (a) 176. (c) 177. (a) 178. (c)

179. (c) The Climate Risk Index (CRI) is prepared by Germanwatch, a non-profit organisation based in Bonn, Germany. Germanwatch seeks to influence public policy on trade, the environment, and relations between countries in the industrialized north and underdeveloped south.

180. (c) The Khajuraho Group of Monuments is a group of Hindu temples and Jain temples in Chhatarpur district, Madhya Pradesh. They are a UNESCO World Heritage Site. The temples are famous for their nagara-style architectural symbolism and their erotic sculptures.

181. (d) A value-added service (VAS) is a popular telecommunications industry term for non-core services, or, in short, all services beyond standard voice calls and fax transmissions. However, it can be used in any service industry, for services available at little or no cost, to promote their primary business.

182. (d) 183. (d) 184. (d)

185. (b) The Odisha government has rolled out its Handicrafts Policy 2019 for creating a vibrant and sustainable handicraft sector in the state. The objective of the policy is to empower handicraft artisans and make them lead partners in the development.

186. (d) Prime Minister Narendra Modi has been honoured with the Seoul Peace Prize. The South Korean government has awarded the Seoul Peace Prize for PM Modi in recognition of his service to international cooperation, global growth and human development.

187. (a) 188. (b) 189. (c) 190. (c) 191. (a)

192. (a) Indian badminton player and Olympic silver-medallist PV Sindhu co-piloted the indigenously made combat fighter jet "Tejas"at the Aero India 2019 as part of the Women's Day observed at the air show, becoming the first ever woman to co-pilot Tejas.

193. (b) The Chief Election Commissioner launched a mobile app, called 'Cvigil,' on July 3, 2018 for citizens to report any violation of the model code of conduct during elections. "cVIGIL" is a user-friendly and easy to operate Android application. It will be operational only where elections are announced.

194. (b)

195. (a) Telugu poet K Siva Reddy has been selected for the prestigious Saraswati Samman, 2018. He has been awarded for his work Pakkaki Ottigilite which is a collection of poetry.

196. (c) 197. (d) 198. (d)

199. (c) The Board for Industrial and Financial Reconstruction (BIFR) was set up in January 1987 by the Rajiv Gandhi government. It was an agency of the Government of India, part of the Department of Financial Services of the Ministry of Finance.

200. (b) Actor Vijay Sethupathi launched the mobile app "DigiCop" of the Chennai Police Department at the Commissioner's office. Using the App, people can track the status of stolen two-wheelers and cell phones.