MANAGEMENT APTITUDE TEST (MAT)

Held on : February 2016

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

SECTION-A : English Language

DIRECTIONS (Qs. 1-5) : *Below questions has alternative summaries. Choose the option that best captures the essence of the text.*

1. 'Vipassana', which means to see things as they really are, is one of India's most ancient techniques of meditation. It was taught in India more than 2500 years ago as a universal remedy for universal ills, and 'Art of Living".
   (a) Vipassana is an ancient Indian meditation technique and it is an art of living.
   (b) Vipassana means to see things as they really are and this meditation technique is believed to cure all ills.
   (c) The ancient Vipassana meditation cures all universal ills.
   (d) Vipassana, the ancient Indian meditation technique means 'to see things as they really are'.

2. "Aroma Therapy" is the oldest branch of natural sciences which originates from oriental part of the world from 10000 BC and was exclusively used to adorn human bodies for physical and mental well being, for religious purpose and embalming bodies. The literary meaning of "Aroma" is sweet smelling and therapy means "Healing Treatment". Thus total meaning of aroma therapy is sweet smelling healing treatment. In true sense, it heals different mental and physical disorders by smelling the characteristic smell of the essential oils extracted from plants.
   (a) "Aroma Therapy" is an old science and is 12000 years old.
   (b) The ancient "Aroma Therapy" uses characteristic smell of natural oils for healing disorders.
   (c) The ancient "Aroma Therapy" is need for curing mental and physical disorders by smelling.
   (d) "Aroma Therapy" uses smelling sweet oils for curing different ailments.

3. The senior dancers who moved around the stage in frienzied circles are called 'Lafife' while the junior dancers forming a circle around the veterans on the stage are called the 'Hanatia'. The dance and music are passed down generations, the spokesperson said. The Al Darawish dance, which dates back to thousand of years, represent the ascent of the human soul to heaven. The movement of the dancers coincide with the natural rhythm of the four seasons and the movement of the pilgrims at the Kaba in Makkah.
   (a) The dance form Al Darawish represents the rhythm of four seasons.
   (b) The dance form Al Darawish represents four seasons are junior dancers form 'Lafife' circles around senior dancers.
   (c) The ancient dance form Al Darawish represents the ascent of the soul to heaven and the movements of dancers coincide with the natural rhythm of the four seasons.
   (d) The ancient dance form Al Darawish represents the movement of pilgrims at Makkah and the movements of dancers coincide with the natural rhythm of the four seasons.

4. Iler Eyebrows are back in fashion. As increasing number of women are opting for hair transplant surgery to get the bushy-browed look. The likes of Kiera Knightley and Emma Watson have brought back the fad of fuller brows leaving behind once popular pencil thin eyebrows,
   (a) Fuller eyebrows have replaced pencil thin eyebrows in the fashion world as more women are going for even hair transplant to get the bushy-browed look.
   (b) Fuller eyebrows look more beautiful than the pencil thin eyebrows.
   (c) The fashion models have changed the rules of fashion by reverting back to fuller eyebrows from the pencil thin eyebrows by going for hair transplant surgery.
   (d) Fuller eyebrows have replaced pencil thin eyebrows in the fashion world.

5. From being a perfect home maker to a daredevil wildlife photographer, women have displayed their capability to multi-task and excel. Whether it is the run-off-the-mill or an offbeat profession, for her, career is a passion and not a mere job.
   (a) Women are multi-task oriented and are doing well.
   (b) For women, career is very important.
   (c) Women take their profession seriously and perform their job professionally.
   (d) Women have proved that they can excel in any profession they take up.

DIRECTIONS (Qs. 6-10) : *Fill in the blanks.*

6. There was a _____ in the price of oil as the producer countries _____ supply.
   (a) slump, increased (b) rise, soared
   (c) plummet, lowered (d) stability, improved

7. In a _____ of speech, there will only be one or two phrases which you will _____ in order to answer the question.
   (a) collection, want (b) flow, use
   (c) stream, need (d) cooperation, collect

8. After a _____ three months of stock market activity, the price of bonds _____ last week.
   (a) tumultuous, stabilised (b) hectic, fell
   (c) variety, surged (d) continuous, soared

9. Michael Schumacher _____ the champagne to _____ his win.
(a) opened, commemorate (b) undid, exhort
(c) uncorked, celebrate (d) released, rejoice

10. Many people want to get away from the rat race or the treadmill, the feeling that work is too_____, and are looking for _____ that is/are less stressful or completely unstressful, a more relaxed way of living, perhaps in the village.
(a) tough, behaviour (b) competitive, lifestyle
(c) stressful, patterns (d) disciplined, challenges

DIRECTIONS (Qs. 11-15) : *A sentence has been divided into four parts. Choose the part that has an error.*

11. (a) Although there has been growing of
(b) interest in popular fiction over the last few years,
(c) one could not claim that it has been established
(d) in colleges as a central component of literary studies.

12. (a) The network society, as any
(b) other social structure, are not absent
(c) of contradictions, social conflicts, and
(d) challenges from alternate form of social organisation.

13. (a) The History of all (b) hitherto society
(c) are the History (d) of class struggle

14. (a) Men differ in their capacities
(b) for excellence, yet democracy
(c) insists that everyone
(d) have an equal right to judge.

15. (a) By a paradox that is not apparent
(b) the discourse that makes people believe
(c) is the one that takes away that it urges them
(d) to believe in, or never delivers what it promises.

DIRECTIONS (Qs. 16-20) : *Choose the order of the sentences marked A, B, C, D and E that forms a logical paragraph.*

16. A. Downshifting doesn't necessarily mean changing your job, but taking steps to stop your work taking over your life and it can involve flexible working.
B. This trend from the US, where it is practised by ten per cent of the working population, has arrived in India.
C. If you feel bored, frustrated and trapped in your job, you are a likely candidate for not just a job change but a downshift.
D. All of these things can lead to a better quality of life.
E. A better word for downshifting would be 'reequilibrating,' suggests Judy Jones, co-author of Getting a Life, the Down Shifter's Guide to a Happier, Simpler Living'.
(a) CBEAD (b) AEDBC
(c) EACBD (d) AEBCD

17. A. To avoid either of these outcomes, they will need to accumulate enough savings during their years in the workforce to support themselves with dignity for nearly twenty years after they are too old to work.
B. Most of India's 144 million informal sector workers who earn ₹3000/- or less per month will become destitute as soon as they stop working.
C. But their fragile labour market attachments and modest intermittent incomes, coupled with the absence of a low cost secure long term savings mechanism has effectively put retirement planning out of reach of India's working poor.
D. Income security in old age is rapidly emerging as one of the most important causes of poverty in India.
E. Or will be forced to work till they die.
(a) DBEAC (b) BADCE
(c) ABDEC (d) DBAEC

18. A. What was once marginal has now become central–the only possible strategy now is alliance, agreement, coalition and accommodation.
B. The shift to bottom-up political power has meant that India's reform agenda has become far more tentative, as policies can be derailed or slowed down by political parties with even small national clout.
C. Untrammeled acceptance of ineffective policies and bad ideas is no longer possible.
D. And, on the flip side coalition politics has worked its magic, and India's potential bureaucrat-visionaries now have too many feet in the aisle ready to trip them over.
E. Since then, however, India's democracy has changed and deepened.
(a) BEACD (b) ACBED
(c) ECDBA (d) DECAB

19. A. The growth and activity of these NGOs is a sign of the changing nature of India's democracy.
B. These organisations are emphasising an approach towards political democracy that is rooted in the idea of 'civil society' rather than in the divisions that now dominate India's politics.
C. This ever-widening group of middle-class Indians is using NGOs to come face-to-face with India's poorer and working classes, and to plant the idea of secular, rights and liberties across these communities.
D. And while it is still early days here, this trend carries a great deal of promise, especially when we consider that the growth of such NGOs has been enabled by a middle class with an active interest in political reforms.
E. This bottom-up civil consciousness, non-political and non-partisan as it is, is a sign of a new kind of democracy in India.
(a) CDABE (b) AEBDC
(c) BDEAC (d) EBADC

20. A. The people in the city were living in an environment where the front end of private goods had largely fallen into place, while the support infrastructure at the back end–transport, water, power–was in shambles, full of ominous creaks and missing pieces.
B. The consuming class noticed that they could buy a house, but they didn't have sewage or water connections, or garbage disposal systems.
C. In the cities, the rise of the middle class (who for the first time in India were educated as well as increasingly wealthy, engaged consumers) helped sharpen the focus on India's hopelessly dilapidated urban infrastructure.

D. It is only since the late 1990s that the popular demand for better infrastructure became more strident.

E. If they bought a car, they had to drive it on terrible roads, and if they chose to walk, they found they could easily fall into an open storm drain or a random hole in the sidewalk that had been gouged open to lay pipes and then forgotten.

(a) EDBAC (b) BADCE
(c) DCBEA (d) BDECA

DIRECTIONS (Qs. 21-40) : *Study the passages given below and answer the questions that follow each passage.*

PASSAGE I

The word 'corruption' has multifarious meanings. It means bribery, it means tax evasion, it also means favoritism. It is an immoral practice which existed in our society since times immemorial in one shape or the other. But today, it has raised its giant shaped head in every facet of life. Be it ministers or officers or even clerks, nobody is free from this evil. Social laws are manipulated; rules and regulations are overlooked just to give favour to somebody and taking money from him in return. Although, corruption is a worldwide phenomenon in India. It has become rampant. Even great man like Bacon, Hastings and Walpole had been accused of corruption. But today, the whole India system has been inflicted with it. From an officer down to a peon, everybody seems to be corrupt.

Efficiency, integrity and morality have gone to the winds. They have become a thing of the past. The devil of corruption is so powerful that it has shattered our economy and destroyed all the noble values of life.

Besides, it has tarnished our image in the eyes of the world. Nepotism, smuggling, hoarding, favoritism and black-money are some of the popular forms of corruption. Tax evasion, adulteration in food, drinks; medicine and other articles of daily use have become the order of the day. There is corruption in every profession. Lawyers, doctors and even teachers have lost their integrity and they place money above service. There are many reasons of corruption in our society. First, the poor economic position of the people is responsible for wide spread corruption. Second, there is lack of national character and moral values. Third, people have developed love for money and they want to maintain a high standard of living at all costs. So they have no conscience to amass wealth through under hand means. They have no time to think of the national interest. The long term solution to the problem is to develop national character. Our education system needs to be overhauled. Honesty should be appreciated and rewarded publicly. Besides this, every department will have to gird up its loin. A strong vigil should be kept on one and all. No one if caught red handed should be spared. Moreover, the officials should be duly paid their salaries so that they do not feel the need of being corrupt. The country needs complete cleaning up from the corrupt officials today.

21. What type of practice is corruption?
(a) It is a social practice
(b) It is an immoral practice
(c) It is a political practice
(d) It is an international practice

22. What is done to promote corruption?
(a) Rules are ignored
(b) Social laws are manipulated
(c) Favouritism is done
(d) All of the above

23. According to the passage, as a result of corruption
(a) economy has been shattered
(b) social values have been promoted
(c) efficiency and morality have become powerful
(d) All of the above

24. The people involved in corruption never think of
(a) international development
(b) national interest
(c) social and moral downfall
(d) All of the above

PASSAGE II

The problem of water pollution is rampant in all thickly populated urban areas. The discharge of untreated industrial water causes water pollution. Next source of air pollution is automobile. In the developing India, the number of automobiles is an important source of air pollution. A large number of vehicles emit three to four per cent of carbon monoxide which is dangerous to health. Marine pollution is yet another problem caused by harbor waste in coastal water. Oil pollution arises from tampering incidents and refinery effluents and oil pipes lines. This results in the destruction of marine life and poses a threat to our ecosystem. Our developing chemical industry is another cause of air and water pollution. A grim tragedy had happened at Union Carbide factory at Bhopal a few years back. The gas which leaked, polluted the environment, nuclear pollution threatens life more than any other pollution today. Nuclear radiation is dangerous to plants, vegetation, animal, water, air and human life.

The release of gases by rockets has an adverse effect. Noise pollution caused by blowing of horns, loud speakers, cassette players and beck sometimes exceeds the human decibel power. This caused tension, hyper-tension, blood pressure and brain diseases. The air and water pollution can cause respiratory ailments, skin diseases, T.B., eye-ailments, cancer and even mental retardation of children, the thin layer of ozone in the atmosphere is a kind of life given system. It cuts out ultraviolet rays and allows the heat producing infrared rays to reach the earth. But owing to industrialisation and consequent pollution, the rate of depletion of the ozone layer is large. Its inability to absorb ultra-violet rays may lead to wide spread incidence of Cancer. Since pollution is a grim threat to human life, some ways and means can be suggested to check it. Our industry should be located in the industrial area far away from the pollution of city people. The automobiles should also be checked so that there should be less exhaust from them. Nuclear plants should be carefully handled to avoid accidents. Chemical industry should be observed strictly and efficiently. Trees also reduce noise transmission. Many experiments prove that trees like neem, banyan and tamarind actually absorb noise.

25. In industrial areas, water pollution is caused by discharge of
(a) purified water (b) polluted water
(c) untreated water (d) treated water

26. Which poisonous gas causes a great danger to health?
(a) Carbon dioxide (b) Carbon monoxide
(c) Carbon flow carbon (d) None of these

27. Respiratory diseases are caused by
(a) air pollution
(b) water pollution
(c) air and water pollution
(d) None of the above

28. The thin layer of ozone in the atmosphere is a system which is
(a) life giving (b) dangerous to life
(c) harmful to health (d) useful for vegetables

PASSAGE III

The lives of the Ancient Greeks revolved around *eris*, a concept by which they defined the universe. They believed that the world existed in a condition of opposites. If there was good, then there was evil, if there was love, then there was hatred; joy, then sorrow; war then peace; and so on. The Greeks believed that good *eris* occurred when one held a balanced outlook on life and coped with problems as they arose. It was a kind of ease of living that came from trying to bring together the great opposing forces in nature. Bad *eris* was evident in the violent conditions that ruled men's lives. Although these things were found in nature and sometimes could not be controlled, it was believed that bad eris occurred when one ignored a problem, letting it grow larger until it destroyed not only that person, but his family as well. The Ancient Greeks saw *eris* as a goddess: Eris, the Goddess of Discord, better known as Trouble.

One myth that expresses this concept of bad *eris* deals with the marriage of King Peleus and the river goddess Thetis. Zeus, the supreme ruler, learns that Thetis would bear a child strong enough to destroy its father. Not wanting to father his own ruin, Zeus convinces Thetis to marry a human, a mortal whose child could never challenge the gods. He promises her, among other things, the greatest wedding in all of Heaven and Earth and allows the couple to invite whomever they please. This is one of the first mixed marriages of Greek Mythology and the lesson learned from it still applies today.

They do invite everyone ... except Eris, the Goddess of Discord. In other words, instead of facing the problems brought on by a mixed marriage, they turn their backs on them. They refused to deal directly with their problems and the result is tragic. In her fury, Eris arrives, ruins the wedding, causes a jealous feud between the three major goddesses over a golden apple and sets in place the conditions that lead to the Trojan War. The war would take place 20 years in the future, but it would result in the death of the only child of the bride and groom, Achilles. Eris would destroy the parents, hopes for their future, leaving the couple with no legitimate heirs to the throne. Hence, when we are told, "If you don't invite trouble, trouble cornea," it means that if we don't deal with our problems, our problems will deal with us ... with a vengeance! It is easy to see why the Greeks considered many of their myths learning myths, for this one teaches us the best way to defeat that which can destroy us.

29. According to the passage, the ancient Greeks believed that the concept of *eris* defined the universe as a
(a) hostile, violent place
(b) condition of opposites
(c) series of problems
(d) mixture of gods and man

30. Most specifically, bad *eris* is defined in the passage as the
(a) violent conditions of life
(b) problems man encounters
(c) evil goddess who has a golden apple
(d) murderer of generations

31. It can be inferred that Zeus married Thetis off because
(a) he needed to buy the loyalty of a great king of mankind
(b) he feared the gods would create bad eris by competing over her
(c) he feared the Trojan War would be fought over her
(d) he feared having an affair with her and, subsequently a child by her

32. It can also be inferred that Zeus did not fear a child sired by King Peleus because he knew that
(a) the child could not climb Mt. Olympus
(b) the child would be killed in the Trojan War
(c) no matter how strong a mortal child was, he couldn't overthrow an immortal God
(d) Thetis would always love him above everyone else

PASSAGE IV

The immune system is equal in complexity to the combined **intricacies** of the brain and nervous system. The success of the immune system in defending the body relies on a dynamic regulatory communications network consisting of millions and millions of cells. Organised into sets and subsets, these cells pass information back and forth like clouds of bees swarming around a hive. The result is a sensitive system of checks and balances that produces an immune response that is prompt, appropriate, effective and self-limiting. At the heart of the immune system is the ability to distinguish between self and non-self. When immune defenders encounter cells or organisms carrying foreign or non-self-molecules, the immune troops move quickly to eliminate the intruders.

Virtually every body cell carries distinctive molecules that identify it as self. The body's immune defenses do not normally attack tissues that carry a self-marker. Rather, immune cells and other body cells coexist peaceably in a state known as self-tolerance. When a normally functioning immune system attacks a non-self-molecule, the system has the ability to remember the specifics of the foreign body. Upon subsequent encounters with the same species of molecules, the immune system reacts accordingly. With the possible exception of antibodies passed during lactation, this so-called immune system memory is not inherited. Despite the occurrence of a virus in your family, your immune system must learn from experience with the many millions of distinctive non-self-molecules in the sea of microbes in which we live. Learning entails producing the appropriate molecules and cells to match up with and counteract each non-self-invader. Any substance capable of triggering an immune response is called an antigen.

Antigens are not to be confused with *allergens*, which are most often harmless substances (such as ragweed pollen or cat hair)

that provoke the immune system to set off the inappropriate and harmful response known as *allergy*. An antigen can be a virus, a bacterium, a fungus, a parasite, or even a portion or product of one of these organisms. Tissues or cells from another individual (except an identical twin, whose cells carry identical self-markers) also act as antigens; because the immune system recognises transplanted tisstfes as foreign, it rejects them. The body will even reject nourishing proteins unless they are first broken down by the digestive system into their primary, non-antigenic building blocks. An antigen announces its foreignness by means of intricate and characteristic shapes called *epitopes*, which protrude from its surface. Most antigens, even the simplest microbes, carry several different kinds of epitopes on their surface; some may even carry several hundred. Some epitopes will be more effective than others at stimulating an immune response. Only in abnormal situations does the immune system wrongly identify self as non-self and execute a misdirected immune attack. The result can be a so-called autoimmune disease such as rheumatoid arthritis or systemic lupus erythematosis. The painful side effects of these diseases are caused by a person's immune system actually attacking itself.

33. What is the analogy used to describe the communications network among the cells in the immune system?
    (a) The immune system's memory
    (b) Immune troops eliminating intruders
    (c) Bees swarming around a hive
    (d) A sea of microbes
34. The immune cells and other cells in the body coexist peaceably in a state known as
    (a) equilibrium (b) self-tolerance
    (c) harmony (d) tolerance
35. What is the specific term for the substance capable of triggering an inappropriate or harmful immune response to a harmless substance such as ragweed pollen?
    (a) Antigen (b) Microbe
    (c) Allergen (d) Autoimmune disease
36. How do the cells in the immune system recognise an antigen as foreign or non-self?
    (a) Through an allergic response
    (b) Through blood type
    (c) Through fine hairs protruding from the antigen surface
    (d) Through characteristic shapes on the antigen surface

PASSAGE V

An **upsurge** of new research suggests that animals have a much higher level of brainpower than previously thought. If animals do have intelligence, how do scientists measure it? Before defining animals' intelligence, scientists defined what is not intelligence. Instinct is not intelligence. It is a skill programmed into an animal's brain by its genetic heritage. Rote conditioning is also not intelligence. Tricks can be learned by repetition, but no real thinking is involved. Cuing, in which animals learn to do or not to do certain things by following outside signals, does not demonstrate intelligence. Scientists believe that insight, the ability to use tools and communication using human language are all effective measures of the mental ability of animals. When judging animal intelligence, scientists look for insight, which they define as a flash of sudden understanding.

When a young gorilla could not reach fruit from a tree, she noticed crates scattered about the lawn near the tree. She piled the crates into a pyramid, then climbed on them to reach her reward. The gorilla's insight allowed her to solve a new problem without trial and error. The ability to use tools is also an important sign of intelligence. Crows use sticks to pry peanuts out of cracks. The crow exhibits intelligence by showing it has learned what a stick can do. Likewise, otters use rocks to crack open crab shells in order to get at the meat. In a series of complex moves, chimpanzees have been known to use sticks and stalks in order to get at a favourite snack–termites. To make and use a termite tool, a chimp first selects just the right stalk or twig. He trims and shapes the stick, then finds the entrance to a termite mound. While inserting the stick carefully into the entrance, the chimpanzee turns it skillfully to fit the inner tunnels. The chimp attracts the insects by shaking the twig. Then it pulls the tool out without scraping off any termites. Finally, he uses his lips to skim the termites into his mouth.

Many animals have learned to communicate using human language. Some primates have learned hundreds of words in sign language. One chimp can recognise and correctly use more than 250 abstract symbols on a keyboard. These symbols represent human words. An amazing parrot can distinguish five objects of two different types. He can understand the difference between the number, colour and kind of object. The ability to classify is a basic thinking skill. He seems to use language to express his needs and emotions. When ill and taken to the animal hospital for his first overnight stay, this parrot turned to go. "Come here!" he cried to a scientist who works with him. "I love you. I'm sorry. Wanna go back?" The research on animal intelligence raises important questions. If animals are smarter than once thought, would that change the way humans interact with them? Would humans stop hunting them for sport or survival? Would animals still be used for food, clothing or medical experimentation? Finding the answer to these tough questions makes a difficult puzzle even for a large-brained, problem solving species like our own.

37. Crows use sticks to pry peanuts out of cracks. Which of the following is the kind of intelligence or conditioning the situation describes?
    (a) Rote learning (b) Tools
    (c) Communication (d) Instinct
38. The **bold** word upsurge as it is used in the first paragraph of the passage, most nearly means a/an
    (a) increasingly large amount
    (b) decreasing amount
    (c) well-known amount
    (d) immeasurable amount
39. According to the passage, which of the following is true about animals communicating through the use of human language?
    (a) Parrots can imitate or repeat a sound
    (b) Dolphins click and whistle
    (c) Crows screech warnings to other crows
    (d) Chimpanzees and gorillas have been trained to use sign language or geometric shapes that stand for words

40. Which of the following is not a sign of animal intelligence?
(a) Shows insight (b) Cues
(c) Uses tools (d) Makes a plan

SECTION-B : Intelligence & Critical Reasoning

DIRECTIONS (Qs. 41-45) : *Complete the series by replacing the question mark (?).*

41. 15 ABC 28, 18 DEF 32, 21 GHI 36, ?, 27 MNO 44
(a) 24 JKL 40 (b) 23 JKL 38
(c) 25 JKL 42 (d) 26 JKL 43

42. A3T, D7R, G16P, J35N, M74L, ?
(a) N102L (b) R126P
(c) P153J (d) Q163R

43. BD 16 FH, JL 64 NP, RT 144 VX, ZB 256 DF, ?
(a) DF 515 HJ (b) HJ 400 LN
(c) CE 400 HJ (d) DF 324 HJ

44. AL20, CQ28, FU40, JX56, ?
(a) LM86 (b) HZ68
(c) OZ76 (d) FZ68

45.

DL	10	14	FR
RX	23	18	SM
KM	?	?	PV

(a) 56, 84 (b) 18, 34
(c) 14, 21 (d) 12, 18

DIRECTIONS (Qs. 46-48) : *Answer these questions based on the information given below.*

There are four friends, namely Akshay, Bhushan, Chanderjeet and Dhiraj. Each person plays one outdoor game and has one hobby related to fine arts.
Two persons are interested in cricket while the other two like to play hockey.
Two of these four persons are painters, one is a singer and the fourth one is a dancer.
Akshay is neither a painter nor a hockey player.
Bhushan does not dance.
The one who likes dancing, plays hockey.
Bhushan and Dhiraj don't play cricket.

46. Who among the following is a singer?
(a) Chanderjeet (b) Dhiraj
(c) Akshay (d) Bhushan

47. Which pair shows the correct relationship of the game and fine arts hobby of Dhiraj?
(a) Cricket, Dancing (b) Cricket, Singing
(c) Hockey, Dancing (d) Cricket, Painting

48. Who amongst the following plays cricket and is interested in painting?
(a) Bhushan (b) Akshay
(c) Chanderjeet (d) Dhiraj

DIRECTIONS (Qs. 49-51) : *Answer these questions based on the information given below.*

Five Indian cities, namely A, B, C, D and E are famous for their lovely gardens, fancy jewellery, educational institutes, blue pottery and scents, but not in the same order. Each city is famous for one of the five important features mentioned above.
A and C are not famous for either educational institutes or gardens.
B and E are neither famous for jewellery nor scents.
Scents and jewellery have nothing to do with A.
D and E are not famous for gardens and jewellery.
D is not famous for educational institutes.

49. Which city has become famous for blue pottery?
(a) B (b) C
(c) A (d) D

50. City E is famous for which of the following?
(a) Scents
(b) Jewellery
(c) Lovely gardens
(d) Educational institutes

51. Which of the following cities is famous for lovely gardens?
(a) C (b) A
(c) B (d) D

DIRECTIONS (Q. Nos. 52-54) : *Answer these questions based on the information given below.*

There is an office block for six officers, namely Anil, Brijendar, Chander, Dharmendar, Alexander and Farmaan. The three offices are on to the left hand side of the entry point in a row and another three on the right hand side of the entry gate in a row. In between these two rows of offices, there is a corridor and all these offices have the doors opening towards the corridor.
Both Brijendar and Chander have their offices to the right of the corridor (as one enters the office block) and Anil occupies an office to the left of the corridor.
Alexandar and Farmaan occupy offices on opposite sides of the corridor but their offices don't face each other.
The offices of Chander and Dharmendar face each other. Alexandar does not have a corner office. Farmaan's office is further down the corridor than Anil's but on the same side.

52. Dharmendar was heard telling someone to go further down the corridor to the last office on the right side. To whose office room was he trying to direct that person?
(a) Chander (b) Anil
(c) Brijendar (d) Alexandar

53. If Alexandar sits in his office facing the corridor, whose office is to his left?
(a) Anil (b) Chander
(c) Brijendar (d) Dharmendar

54. Who is/are Farmaan's immediate neighbour(s)?
(a) Chander only (b) Anil and Chander
(c) Anil only (d) Dharmendar only

DIRECTIONS (Qs. 55-57) : *Answer these questions based on the information given below.*

Five courses – A, B, C, D and E each of one month duration are to be taught from January to May one after the other though not necessarily in the same order by lecturers P, Q, R, S and T. P teaches course B but not in the month of April or May. Q teaches

course A in the month of March. R teaches in the month of January but does not teach course C or D.

55. Which course is taught by S?
(a) A (b) E
(c) Either C or D (d) B

56. Which lecturer's course immediately follows after course B?
(a) Q (b) P
(c) S (d) T

57. Which course is taught in the month of January?
(a) C (b) D
(c) E (d) Data inadequate

DIRECTIONS (Qs. 58-60) : *Answer these questions based on the information given below.*

Piyush, Kadir Khan, Rajeev, Sunanda, Trilochan and Urvashi are six members of a family. Each one is engaged in a different profession, i.e. Doctor, Lawyer, Teacher, Engineer, Nurse and a Banker.

- Each one of them remains at home on a different day of the week from Monday to Saturday.
- The lawyer in the family stays at home on Thursday.
- Rajeev stays at home on Tuesday.
- Piyush, a doctor, does not remain at home either on Wednesday or Saturday.
- Sunanda is neither a lawyer nor the teacher, but she remains at home on Friday.
- Kadir Khan is the engineer.
- Trilochan is the bank manager.

58. Which of the following combinations is correct?
(a) Urvashi – Thursday (b) Rajeev – Teacher
(c) Sunanda – Nurse (d) All are correct

59. Who among them stays at home on the following days on which Rajeev stays at home?
(a) Kadir Khan or Trilochan
(b) Kadir Khan
(c) Sunanda
(d) Urvashi

60. Who is the nurse in the family?
(a) Urvashi (b) Sunanda
(c) Piyush (d) Trilochan

DIRECTIONS (Qs. 61-65) : *These questions have a statement followed by two conclusions I and II. Decide which of the conclusions follows from the statement.*

Mark answer
(a) if conclusion II follows
(b) if conclusion I follows
(c) if neither conclusion I nor II follows
(d) if both conclusions I and II follow

61. **Statement** There has been an unprecedented increase in the prices of essential Commodities, like vegetables, pulses, fruits, sugar, milk, wheat, etc., and increase in the prices of diesel and petrol has further aggravated the situation this year.

Conclusions
I. The supply and demand must match and government must arrest the hoarders and middlemen who are creating an artificial scarcity of these essential items.
II. The items in short supply can be imported and their indigenous production be increased.

62. **Statement** The Reserve Bank of India has, on 20th March, increased the Repo Rate by 25 basis points to 50.

Conclusions
I. This will surely anchor inflation.
II. The banks will now raise the lending and deposit rates.

63. **Statement** Our parliamentary system is not very successful because most of our countrymen cast their votes based on caste and religion.

Conclusions
I. Only educated and principled persons should be given the right to vote.
II. We need to create an awareness in our people to rise above caste and religion at the time of casting their vote.

64. **Statement** Against the backdrop of surging inflation, the Union Cabinet in March 2014 has decided to increase the Dearness Allowance for Central Government employees and pensioners by 8% with effect from January 2014.

Conclusions
I. This will provide some relief to the Central Government employees and pensioners against the surging inflation.
II. Increase in Dearness Allowance will neutralise, to some extent, increase in the cost of living.

65. **Statement** Some people in this country want the President to be more than a figurehead and to take more active interest in national politics.

Conclusions
I. In a parliamentary democracy, the President has to be content with a more or less passive role.
II. The President, under the provisions of the Constitution, is bound by the advice of the Council of Ministers and so he or she should not come into conflict with the Ministry or Parliament.

66. When your smoking father, relative or a friend comes close to give you a hug or a kiss, push him away because a smoker's kiss could be deadly. According to Professor Robert Booy, Director of Research at the National Centre for Immunisation and Research at Sydney's Children Hospital, the smokers are the prime carriers of potentially deadly *Meningococcus* bacteria in their mouth. Smokers generally carry more of these dangerous germs which they easily pass on to others when they kiss them. Booy is of the opinion that infants and small children if infected with this deadly meningococcal disease, can even die due to it. Which of the following is not in consonance with the contents of the passage?

(a) Many parents who smoked are now going outside the house to indulge in smoking and this reduces a child's risk of passive smoking. Many of the problems of ear and eye infection, asthma or even sudden infant death syndrome are on the decrease after the research findings were made public.

(b) As per Booy's research, 92% of New South Wales residents aged over 16 have become so much aware of the serious effects of smoking and *Meningococcus* bacteria that they have started living in smoking-free houses now. None in the house can smoke to passively affect others.

(c) The other symptoms of *Meningococcal* disease may include sudden onset of fever, severe headaches, drowsiness, sore joints, nausea, vomiting, a dislike of bright lights, a stiff neck and a rash of red-purple spots. One must consult the doctor in such a situation.

(d) Those who are used to smoking and can't give up this habit, may continue to enjoy smoking but should refrain from kissing their family members especially small children and infants, so that they don't pass on this deadly bacteria to them.

67. A simple blood test that can detect a cancer before a tumour has taken shape has been developed by British scientists. Described as offering a paradigm shift in cancer diagnosis, the test, few years back introduced in Britain few years back—was the first to identify accurately the signals sent out by a person's immune system as cancer germinates. According to the research, such signals can be detected up to 5 yr before a tumour is spotted prompting doctors to intervene at the earliest moment when a solid cancer appears. The brainchild of scientists at the University of Nottingham is a company called Oncimmune which uses a technology to find out how the immune system responds to the first molecular signs of cancer development.
Which of the following is not in consonance with the contents of the passage?

(a) But the other investigation tools will have to be used to know the exact location of the cancerous part and its intensity. The effect of the cancerous part on the critical parts of the body in the neighbourhood of the affected area will also have to be studied.

(b) Cancerous cells produce small amounts of proteins called antigens which prompt the immune system to produce large amounts of autoantibodies. Scientists can now follow this activity with just 10 mL of a patient's blood sample.

(c) "We are starting to understand *Carcinogenesis* in a way that we have never seen before — seeing which proteins are going wrong, and how the immune system responds. It is as if our body is shouting 'I have got cancer, way before a tumour can be detected," — said John Robertson.

(d) John Robertson, a breast cancer specialist who led the research, said, "the earliest cancer we have seen is a cancer that has been screen detected and yet biologically, it is late in the road of cancer development. Now, it is the blood sample which will detect the propagation of this disease".

68. Delhi is producing close to 7500 tonne of solid waste per day, an amount which is expected to go up to around 14300 tonne by 2021. The state of environment report says that even if a reasonable amount of this waste is collected and disposed of, it will require an 800 hectare landfill site. However, if segregation and treatment of waste is done properly, only 5-10% of the waste will have to be disposed of, the report says.
"The most acceptable strategy for solid waste management in Delhi will be to categorise waste streams as biodegradable, re-cyclable and inert matter to maximise recovery and minimise quantity of waste generation."
According to the report, municipal solid waste management is in a mess. The three landfill sites have long been exhausted but no workable plan to replace them is in place.
The report also suggests that relatively affluent zones generate about 40% organic waste which hints at wasteful habits of residents there.
The city also produces around 5000 tonne of hazardous waste per year. Though, some of it comes from the sludge at common effluent treatment plants, most of it is generated at dyeing and pickling units and electroplating factories. This waste often finds its way to the municipal solid waste dumps, posing a hazard not just to the environment but also to humans.
Which of the following is not in consonance with the contents of the passage?

(a) Biomedical waste from hospitals, which is highly infectious, is generated, on an average to the tune of 10 tonne per day, which is again treated at common waste disposal facilities.

(b) Hazardous waste should be better managed by relocating the industrial units to the specified conforming areas and preparing an elaborate inventory of the waste and its appropriate disposal.

(c) Delhi has no hazardous waste management facility and it has led to 23 illegal hazardous waste sites in the city.

(d) Electronic waste is another headache for the capital. Delhi is the second largest generator of e-waste in the country.

69. The new research has cast doubts on the warnings that rising sea levels caused by climate change are slowly inundating low-lying pacific islands. The scientists have studied 27 low-lying pacific islands, comparing the aerial photos from 60 yr ago with modern satellite images, according to a recent research. Paul Kench of the university of Auckland in New Zealand and Arthur Webb at the South Pacific applied Geoscience Commission in Fiji have found that only four out of the 27 islands have declined in size despite an average rise in sea level by 12 cm during the 60 yr period.
Half of the rest remained the same size while the other half of the islands had increased in size during this period.

Kench says – "It is clear that islands respond in different ways to climate changes and rising sea levels. There is no one model that fits into all kinds of scenarios. It was important to have a sensible debate over the impact of climate change rather than just saying the sea level is going up and the islands must all disappear."
Which of the following is not in consonance with the contents of the passage?

(a) Although, the study involved only the land area, Kench says his previous researchers had shown that cyclones and storms — which are predicted to become more frequent with climate change — also often played an important role in increasing the heights of the islands.
(b) The study shows that some islands are growing because waves, currents and winds are pushing coral debris from the surrounding reefs onto the shore.
(c) The study is very important and relevant but not very reliable. The modern methods of taking the aerial views and measurement of these islands through satellite images is far more accurate and comparing them with 60 yr old conventional maps is not logical. We may compare today's results with new data taken after 5-10 yr and then draw the conclusions.
(d) The study found seven islands having grown in area by more than 3% on an average since the 1950s with one island expanding nearly by 30%.

70. Five persons are standing in a line in a ceremony. One of the two persons standing at the extreme ends is a General Manager and the other one is a Senior Manager. The Deputy General Manager is standing to the right of the Assistant General Manager. A Deputy Manager is to the left of the Senior Manager. The Assistant General Manager is standing between the General Manager and the Deputy General Manager. Counting from the left, what is the position of the Deputy General Manager?

(a) Second (b) First
(c) Third (d) Fifth

71. Hemant walks from his house and moves 4 m towards North. He turns left at 90° to his right and moves 3 m. He takes another 90° turn to the right and walks 1 m. From here Hemant turns 90° to the left and moves for another 1 m. He finally turns 90° to the right and moves for another 3 m, his final destination. What is the distance between the starting and destination points?

(a) 5m (b) 4m
(c) 7m (d) 8m

72. Five friends namely L, M, N, R and S are standing in a row facing South, but not necessarily in the same order.
Only M is between L and S.
N is to the immediate right of S.
R is to the immediate left of L.
Who is occupying the middle position in the row?

(a) S (b) L
(c) M (d) R

73. Pointing to a lady in a photograph, Dev said, "This woman is my sister's father's son-in-law's wife." How is Dev related to the woman?

(a) Mother (b) Wife
(c) Sister (d) Can't say

74. While going to his office Tejveer meets Rakesh who is related to Tejveer because Tejveer is Deepak's father who is married to Garima. Garima is the daughter of Rakesh, Garima has a daughter named Isha. How is Tejveer related to Isha?

(a) Grandfather (b) Uncle
(c) Father-in-law (d) Grandmother

75. Raja is the son of Varan's father's sister. Sameer is the son of Ganga, who is the mother of Jai and the grandmother of Varan. Nitin is the father of Varsha and the grandfather of Raja. Ganga is the wife of Nitin. How is Raja related to Ganga?

(a) Nephew (b) Son
(c) Grandson (d) Data inadequate

76. In a code language, 'mok dan sil' means 'nice big house', 'fit kon dan' means 'house is good' and 'warm tir fit' means 'cost is high'. Which word stands for 'good' in that language?

(a) mok (b) don
(c) fit (d) kon

DIRECTIONS (Qs. 77-80) : *Each of these questions has an Assertion (A) and a Reason (R).*

Mark answer

(a) if both (A) and (R) are true but (R) is not the correct explanation of (A).
(b) if both (A) and (R) are true and (R) is the correct explanation of (A).
(c) if (A) is true but (R) is false.
(d) if (A) is false but (R) is true.

77. **Assertion (A)** Students should have a clear-cut objective of their future.
Reason (R) Students should be focussed and committed to achieve their goal in life.

78. **Assertion (A)** One who does not plan ones future, plans for failure.
Reason (R) Failure is the pillar of success.

79. **Assertion (A)** Students should have a definite time-table for preparing for an exam.
Reason (R) To do well in an exam, one must prepare in a planned manner.

80. **Assertion (A)** As we go higher up in the mountains, the atmospheric pressure decreases.
Reason (R) The air at higher altitudes, is comparatively pure.

SECTION-C : Mathematical Skills

81. There are 10 white, 8 red and 6 green balls on a pool table. The number of ways in which one or more balls can be put in the pocket, is _____.

(a) 563 (b) 652
(c) 692 (d) 752

82. There are 5 different green dyes, 4 different blue dyes and 3 different red dyes. How many combinations of dyes can be chosen taking atleast one green and one blue dye?
(a) 3720 (b) 4523
(c) 5214 (d) None of these

83. There are 7 men and 3 women candidates contesting for two vacancies. An elector can vote for any number of candidates not exceeding the number of vacancies. In how many ways can be vote?
(a) 35 (b) 42 (c) 25 (d) 55

84. The students in a class are seated according to their marks in the previous examination. Once, it so happens that four of the students got equal marks and therefore got the same rank. To decide their seating arrangement, the teacher wants to write down all possible arrangements one in each of separate bits of paper in order to choose one of these by lots. How mamy bits of papers are required?
(a) 24 (b) 12 (c) 48 (d) 36

85. 10 different letters of English alphabet are given. A word is formed using 5 letters out of these. The probability that atleast one letter is repeated in the word, is _____.
(a) 1/56 (b) $10^5 - {}^{10}P_5$
(c) 2/5 (d) None of these

86. An instrument manufactured by a company consists of two parts A and B. In manufacturing part A, 9 out of 100 are likely to be defective and in manufacturing part B, 5 out of 100 are likely to be defective. What is the probability that the instrument will not be defective?
(a) 0.23 (b) 0.86
(c) 0.36 (d) 0.45

87. A and B play a game, where each is asked to select a number from 1 to 16. If the two numbers match, both of them win a prize. What is the probability that they will not win a prize in a single trial?
(a) 15/16 (b) 14/16
(c) 16/17 (d) 16/18

88. A speaks truth in 75% of cases and B in 80% of cases. A and B agree in a statement. What is the probability that the statement is true?
(a) 12/13 (b) 11/15
(c) 14/17 (d) 17/21

89. P alone would take 8 h more to complete a job than P and Q would together. If Q worked alone, he took $4\frac{1}{2}$ h more to complete it than both P and Q worked together. What time would they take, if both P and Q worked together?
(a) $\frac{72}{25}$h (b) $9\frac{1}{2}$h
(c) 6 h (d) 11 h

90. Sapan can stitch a suit in 3h less time than Shravan, Sapan stitches it alone for 4h and then Shravan taken over and completes it. If altogether 14h were required to stitch the suit, how many hours would Shravan take to stitch the same alone?
(a) 12 (b) 7
(c) 9 (d) 15

91. A alone would take 27 days more to complete the job than both A and *B* would together. If *B* worked alone, he took 3 days more to complete the job than A and *B* worked together. What time would they take, if both A and *B* worked together?
(a) 7 days (b) 9 days
(c) 11 days (d) 8 days

92. Two shopkeepers A and *B* sell machines at the same list price. A allows two successive discounts of 30% and 16%, and *B* allows discounts of 20% and 26%. Which discount series is more advantageous to the purchaser?
(a) A's (b) *B's*
(c) Both are equal (d) None of these

93. A shopkeeper sold an article at a profit of 17.5%. If he had bought it at 8% less and sold it at 30% profit, he would have earned ₹ 11.55 more as profit. Cost price of the article is _____.
(a) ₹ 550 (b) ₹ 675
(c) ₹ 750 (d) ₹ 475

94. An article is listed at ₹ 65. A customer bought this article for ₹ 56.16 with two successive discounts of which one is 10%. The other discount of this discount scheme that was allowed by the shopkeeper is _____.
(a) 4% (b) 3%
(c) 6% (d) 2.5%

95. A garment company declared 15% discount for wholesale buyers. Mr. Sachdev bought garments from the company for ₹ 25000 after getting discount. He fixed up the selling price of garments in such a way that he earned a profit of 8% on original company price. What is the approximate total selling price?
(a) ₹ 28000 (b) ₹ 29000
(c) ₹ 31000 (d) ₹ 29500

96. The distance between two multistoried buildings is 60 m. The angle of depression of the top of the first building as seen from the top of the second building which is 150 m high is 30°. The height of the first building is _____.
(a) $(150+2\sqrt{3})$ m (b) $(150-20\sqrt{3})$ m
(c) $(150+10\sqrt{3})$ m (d) $(15-10\sqrt{3})$ m

97. The length of a string between a kite and a point on the ground is 90 m. The string makes an angle of 60° with the level ground. Assuming that there is no slack in the string, the height of the kite is _____.
(a) $45\sqrt{3}$ m (b) $45/\sqrt{3}$ m
(c) $50\sqrt{3}$ m (d) $50/\sqrt{3}$ m

98. An observer standing at the top of a building observes that angle of depression of a kite lying on the ground is 30°. If height of building is 30 m and height of observer ia 2 m, then what is the horizontal distance of kite from the building?
(a) 60 *m* (b) 64 *m*
(c) 55 *m* (d) 45 *m*

99. What is the total surface area of a triangular prism whose height is 30 m and the sides of whose base are 21 m, 20 m and 13 m, respectively?
(a) $1872\,m^2$ (b) $1725\,m^2$
(c) $1652\,m^2$ (d) $1542\,m^2$

100. A cistern of dimensions 2.4 m × 2.0 m × 1.5 m takes 2 h 30 min to get filled with water. The rate at which water flows into the cistern, is _____.
(a) $0.48000\,m^3/h$ (b) $800\,m^3/min$
(c) $800\,cm^3/s$ (d) $80\,m^3/min$

101. It is required to design a circular pipe such that water flowing through it at a speed of 7 m/min fills a tank of capacity $440\,m^3$ in 10 min. The inner radius of the pipe should be _____.
(a) 2m (b) $\sqrt{2}$m
(c) l/2m (d) $1\sqrt{2}$ m

102. Two pipes *A* and *B* can fill a tank in 20 and 30 h respectively. Both the pipes are opened to fill the tank but when the tank is one-third full, a leak develops in the tank through which one-fourth water supplied by both pipes goes out. What is the total time taken to fill the tank?
(a) $14\frac{2}{3}$ h (b) 15 h
(c) $12\frac{1}{2}$ h (d) $9\frac{1}{2}$ h

103. A tank is filled by three pipes with uniform flow. The first two pipes operating simultaneously fill the tank in the same time during which the tank is filled by the third pipe alone. The second pipe fills the tank 5 h faster than the first pipe and 4 h slower than the third pipe. The time required by the first pipe is
(a) 6 h (b) 10 h
(c) 15 h (d) 30 h

104. A booster pump can be used for filling as well as for emptying a tank. The capacity of the tank is $2400\,m^3$. The emptying capacity of the tank is $10\,m^3/min$ higher than its filling capacity and the pump needs 8 min lesser to empty the tank than it needs to fill it. What is the filling capacity of the pump?
(a) $50\,m^3/min$ (b) $60\,m^3/min$
(c) $72\,m^3/min$ (d) $36\,m^3/min$

105. A train running at 7/11 of its own speed reached a place in 22 h. How much time could be saved, if the train runs at its own speed ?
(a) 7 h (b) 8 h
(c) 14 h (d) 16 h

106. A train overtakes two persons walking along a railway track. The first one walks at 4.5 km/h. The other one walks at 5.4 km/h. The train needs 8.4 and 8.5 s respectively to overtake them. What is the speed of the train, if both the persons are walking in the same direction as the train?
(a) 66 km/h (b) 72 km/h
(c) 78 km/h (d) 81 km/h

107. A train travelling at 48 km/h completely crosses another train having half of its length and travelling in opposite direction at 42 km/h in 12 s. It also passes a railway platform in 45 s. The length of the platform is_____.
(a) 400 m (b) 450 m
(c) 560 m (d) 600m

108. If ₹ 1000 be invested at interest rate of 5% and the interest be added to the principal every 10 yr, then the number of years in which it will amount to ₹ 2000 is
(a) $6\frac{2}{3}$ yr (b) $6\frac{1}{4}$ yr
(c) 16 yr (d) 11 yr

109. A sum of ₹ 7700 is to be divided among three brothers Sunil, Sumant and Surat in such a way that simple interest on each part at 5% per annum after 1, 2 and 3 yr respectively remains equal. The share of Sunil is more than that of Surat by _____.
(a) ₹ 2800 (b) ₹ 2500
(c) ₹ 3000 (d) ₹ 2700

110. A man borrows ₹ 4000 from a bank at $7\frac{1}{2}\%$ compound interest. At the end of every year, he pays ₹ 1500 as part repayment of loan and interest. How much does he still owe to the bank after three such instalments?
(a) ₹ 123.25 (b) ₹ 125
(c) ₹ 400 (d) ₹ 469.18

111. Three numbers A, B and C are in the ratio of 12:15:25. If sum of these numbers is 312, the ratio between the difference of B and A and the difference of C and B is _____.
(a) 3:7 (b) 10:3
(c) 3:10 (d) 5:1

112. Mixture of milk and water has been kept in two separate containers. Ratio of milk to water in one of the containers is 5:1 and that in the other container is 7:2. In what ratio the mixtures of these two containers should be added together so that the quantity of milk in the new mixture may become 80%?
(a) 2:3 (b) 3:2
(c) 4:5 (d) None of these

113. There are four friends. The average score in unit test of the first three is 15 and that of the last three is 16. If the score of the last friend is 19, then first friend's score is what percent of average of the last three?
(a) $66\frac{2}{3}\%$ (b) 300%
(c) $33\frac{1}{3}\%$ (d) None of these

114. While calculating the average of a batsman as 36 in 100 matches that he played, one of the scores 90 was incorrectly noted as 40. The percentage error is —.
(a) 0.5% (b) 1.36%
(c) 1.34% (d) 1.21%

115. A number when divided by 17 leaves 12 as remainder while on dividing by 11 leaves 8 as remainder. The remainder that it leaves on dividing by 23 is —.
(a) 15 (b) 17
(c) 0 (d) 14

116. In a cyclic quadrilateral ABCD, angle A is double than its opposite angle and the difference between the other two angles is one-third of angle A. The maximum difference between any two angles of this quadrilateral is —.
(a) 30° (b) 10°
(c) 20° (d) 60°

117. Small balloons are used to decorate a wall in the form of concentric circles, 12 in number. 4 balloons can be put in the form of circle of length 10 cm. How many balloons are required if the innermost circle has radius 5 cm and each consecutive circle exceeds the other by a radius of 1 cm?
(a) 316 (b) 317
(c) 320 (d) 323

118. A retailer bought a certain number of CDs for ₹ 1800. Keeping one to himself, he sold the rest at a profit of ₹ 6 each. In total, he earned a profit of ₹ 114. The number of CDs he bought is_____.
(a) 20 (b) 28
(c) 32 (d) 30

119. Twenty nine times the area of a square is one square metre less than six times the area of the second square and nine times the side of it exceeds the perimeter of other square by one metre. The difference in sides of these squares is_____.
(a) 5m (b) 54/11 m
(c) 11 m (d) 6m

120. A car takes 15 min less to cover a distance of 75 km, if it increases its speed by 10 km/h from its usual speed. How much time would it take to cover a distance of 300 km using this speed?
(a) 5 h (b) $5\frac{1}{2}$ h
(c) 6 h (d) $6\frac{1}{2}$ h

SECTION-D : Data Analysis & Sufficiency

DIRECTIONS (Qs. 121-125) : *Table A gives the readership of magazines in hundred from 2012 to 2015 and table B indicates the number of magazines published during this period. Answer the following questions based on these tables.*

Table A

Category	2012		2013		2014		2015	
	E	H	E	H	E	H	E	H
General	1000	1200	1500	1600	2000	1800	2500	2000
Sports	400	200	600	400	1000	700	1200	800
Film	600	800	900	1200	1000	1500	1200	1800
Business	300	100	400	150	600	250	800	500

Table B

Category	2012		2013		2014		2015	
	E	H	E	H	E	H	E	
General	12	10	15	14	17	15	29	16
Sports	3	2	5	3	7	4	8	6
Film	3	4	5	6	5	7	6	8
Business	4	2	5	3	6	4	7	8

E = English, H= Hindi
No magazine was discontinued during the above period.

121. What is the approximate average readership per magazine in 2014?
(a) 13400 (b) 14600 (c) 13000 (d) 14100

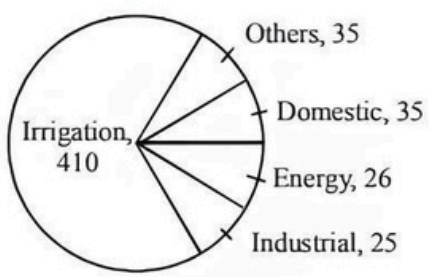
122. Between 2012 and 2014, the number of magazines added is .....
(a) 25 (b) 22 (c) 26 (d) 28

123. What is the ratio of added Hindi magazines to added English magazines between 2012 and 2013?
(a) 2 (b) 3 (c) 1 (d) 6

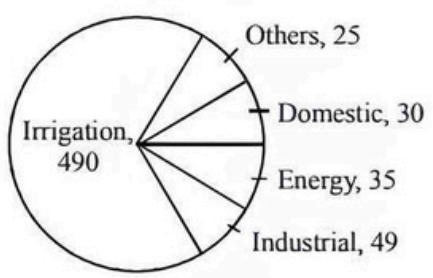
124. In 2013, as against 2013, readership per magazine declined for which category?
(a) General (b) Sports
(c) Business (d) Film

125. Considering only the English Sports magazines, what is the ratio between readership in 2012 and the readership during 2012-15?
(a) 4/53 (b) 1/8 (c) 2/9 (d) 2/15

DIRECTIONS (Qs. 126-130) : *These questions are based on the pie charts which represent the shift in water usage between 2012 and 2015; based on a survey conducted by Central Water Commission.*



Water usage in 2012
(in trillion litres)



Water usage in 2015
(in trillion litres)

126. If the ratio of processing cost for water for industrial, energy and domestic usage is 3:5:2, what is the ratio of processing cost for above mentioned usage in 2012 to that in 2015?
(a) 0.72 (b) 0.68
(c) 0.60 (d) 0.77

127. What is the percentage increase in usage in energy related sector from 2012 to 2015?
(a) 23.3% (b) 14.4%
(c) 15.4% (d) 34.6%

128. What is the irrigation usage as percentage of total usage in 2014?
(a) 83.45% (b) 65.18%
(c) 75% (d) 77.9%

129. What is the difference in domestic usage as percentage of total usage between 2012 and 2015?
(a) 2.08 (b) 3.16
(c) 2.26 (d) 1.82

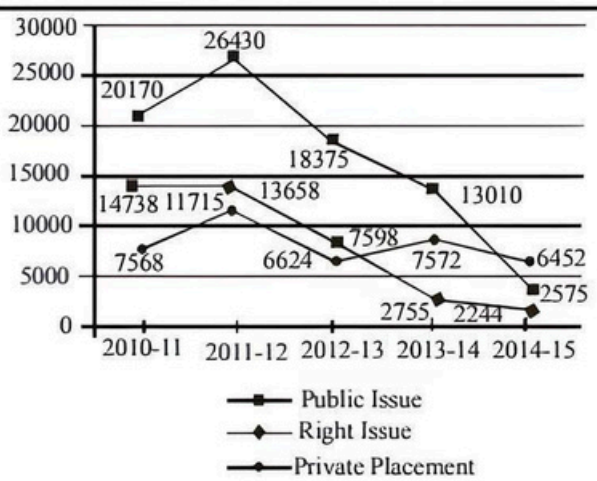
130. Which one out of the four shows the highest percentage increase in usage from 2012 to 2015?
(a) Industrial (b) Domestic
(c) Others (d) Energy

DIRECTIONS (Qs. 131-135) : *Each of these questions consists of two quantities, one in Column A and the other in Column B. Compare the two quantities and mark answer as*

(a) if the quantity in Column B is greater
(b) if the quantity in Column A is greater
(c) if the two quantities are equal
(d) if comparison cannot be made from the information given

	Column A	Column B
131.	$(16 \div 4 + 8 \times 2 - 8)$	$(3 \times 4 + 1 \div 5 - 3)$
132.	0.01 divided by 0.1	0.01 times 0.1
133.	$\sqrt[9]{1/3}$	$\sqrt[6]{1/2}$
134.	Semi-circumference of a circle with radius 10 cm	Circumference of a circle with radius 5 cm
135.	Circumference of a circle with radius = lcm	Perimeter of a square whose sides is 1.5 cm

DIRECTIONS (Qs. 136-140): *Study the graph to answer these questions. The graph indicaters the amount of money raised through various financial instruments from capital market XYZ Ltd. The amount is in ₹ crore.*



136. The amount of private placement raised as a percentage of total funds raised was the maximum in the year
(a) 2012-13 (b) 2010-11
(c) 2010-11 (d) 2013-14

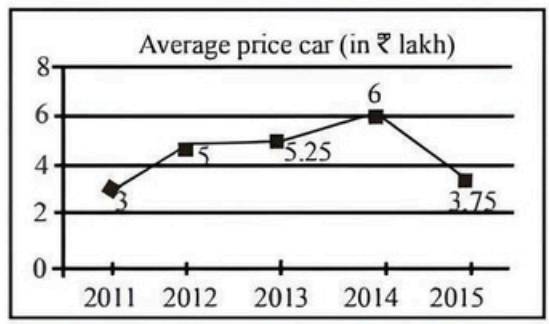
137. The total amount of funds raised was the least in which of the following years?
(a) 2010-11 (b) 2014-15
(c) 2009-10 (d) 2012-13

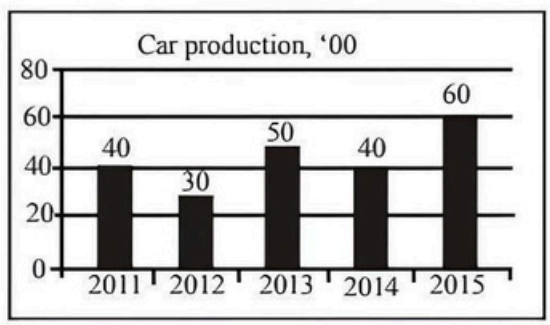
138. The average amount raised by way of public issue for the period 2009-10 to 2013-14 excluding the period 2010-11 is
(a) ₹ 14159 crore (b) ₹ 16112 crore
(c) ₹ 17628 crore (d) ₹ 13532 crore

139. What is the percentage of amount raised by public issue to the total amount raised?
(a) 49.9% (b) 52%
(c) 50.19% (d) 46%

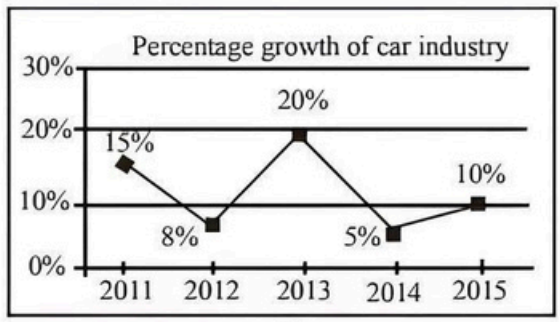
140. What is the percentage decrease in amount raised by rights issue in 2010-11 against that of 2011-12?
(a) 42.2% (b) 44.4%
(c) 54.4% (d) 46%

DIRECTIONS (Qs. 141-145) *Study the graphs to answer these questions.*





B



C

The graphs are related to M/s PAL, a reputed automobile company in Asia. Graph A indicates the average price per car in ₹ lakh. Graph B represents the production in units of thousands. Graph C depicts the growth rate of the entire car industry on volume basis.

141. What is the average annual growth rate of PAL car production for the period 2012 to 2015?
(a) 20% (b) 100%
(c) 50% (d) 33.3%

142. The maximum percentage change with respect to previous year in the average price per car of PAL is _____.
(a) 40% (b) 42.2%
(c) 66.67% (d) 25.5%

143. What is the percentage share of PAL in 2013, if the total production of car industry is 3 lakh in that year?
(a) 25% (b) 16.7%
(c) 50% (d) 33.3%

144. If only 80% of PAL cars produced in 2012 were sold in that year and the rest were sold in the next year, what is the revenue of the company in 2012 assuming that the inventory at the beginning of 2012 is zero?
(a) ₹ 1080 crore (b) ₹ 750 crore
(c) ₹ 7500 crore (d) None of these

145. If there is rejection of 10% of the production in 2011 due to quality control issues, what in the turnover of PAL, assuming Sales = Production - Rejection?
(a) ₹ 986 crore (b) ₹ 720 crore
(c) ₹ 1080 crore (d) ₹ 850 crore

DIRECTIONS (Qs. 146-150) : *Read the following passage to answer these questions .*

As per the report published in one of the magazines, it transpires that about 20% of the world's humanity lives in South Asia and has approximately half of the world's illiterates. It was further noted that only 46% of South Asia's adult population was literate versus 53% in Sub-Saharan Africa. This report further states that only 30% births are attended by trained health workers or nurses there. Ten out of 100 infants die at infancy and four more die before attaining the age of five years. In fact half of the 104 million juvenile malnutrition cases are to be seen in Bangladesh, Pakistan and India where India accounts for 42 million such cases for the children below the age of 5 yr.

If these children survive the first 5 yr, there are even chances that they will not attend school. 44% of those who attend the school drop out after fifth standard. They have to go out for earning to add up to the family income. 25% of South Asian children under the age of 18 work as labourers or work in the fields and the region has almost 125 million children in the job market. Unofficial figures indicate that about 48 million Indian children form the largest chunk of such population but the official figure is 20 million. The record book indicates that 68% of Indian male children are enrolled in schools whereas the girl children share is 43%. Only 42 out of 100 women are literate as compared to 65% for men.

146. The number of children below the age of 18 in South Asia is _____ millon.
(a) 370 (b) 420
(c) 350 (d) 500

147. The percentage of the infants born who do not drop out before reaching 5 standard is
(a) 20 (b) 33
(c) 25 (d) Cannot be determined

148. _____ % of world's illiterate live in South Asia.
(a) 50 (b) 35
(c) 25 (d) 17

149. _____ % of infants born in South Asia do not survive beyond the age of 5.
(a) 16 (b) 10
(c) 4 (d) 14

150. The adult literacy rate in Sub-Saharan Africa exceeds that of South Asia by
(a) 16.6% (b) 20%
(c) 12% (d) None of these

DIRECTIONS (Qs. 151-160) : *Each of these has a question followed by I and II.*

Mark answer
(a) if statement II alone is sufficient to provide the answer
(b) if statement I alone is sufficient to provide the answer
(c) if both statements are required to provide the answer
(d) if neither statement I nor II is sufficient to provide the answer

151. If the expression $x^2 - 4x + 3.75 = 0$ is true, what is the unique value of x?
I. x is a positive real number.
II. x is less than $\left(1+\frac{1}{n}\right)^n$, where n is a positive integer.

152. Amongst five students A, B, C, D and E, who got the maximum marks?
I. D got more than A and C.
II. B got less than E but more than D.

153. What is the cost of a book?
I. The selling price is 25% more than the cost price.
II. The seller makes a profit ₹ 100 on selling every lot of 5 books.

154. How many tonne of cement will be needed for the foundation of a flat?
I. For construction of entire flat, 50 tonne of cement will be used.
II. The volume of the cement needed for the foundation is 100 cubic yards.

155. A toy was initially listed at a price to give the shopkeeper 20% profit of the wholesale cost. What is the wholesale cost ?
I. After reducing the listed price by 10%, the toy sold for a profit of ₹ 10.
II. The toy sold for ₹ 50.

156. In a class, 150 students took the examination of Physics and Chemistry. 90 students passed in Chemistry and 50 passed in Physics. How many students passed in both?
I. Overall 30 students failed in both the papers.
II. Physics paper was tougher than Chemistry paper.

157. Is $a < b$?
I. $a^2 - 4a + 4 = 0$
II. $b^2 - 6b + 9 = 16$

158. In a queue for railway tickets, 5 persons Ram, Shyam, Narender, Naresh and Ramesh are standing in random order. Who is the third person in the queue?
I. Shyam is standing behind Ram and Narender is ahead of Ram.
II. The queue starts from Ramesh and ends with Naresh.

159. In a group of 4 students X, Y, Z and A, who got the maximum marks?
I. Z got less marks than Y.
II. Y got more marks than X but less than A.

160. What is the value of a 2-digit number?
I. The sum of the 2 digits is 6.
II. The difference of the 2 digits is 2.

SECTION-E : Indian & Global Environment

161. Who has recently become the first Indian central banker to be appointed for the next 3 years as Vice-Chairman of the Bank of International Settlements (BIS) the bank for Central Banks?
(a) Chanda Kochhar (b) Raghuram Rajan
(c) S S Mundra (d) None of these

162. The political party lead by Aung San Suu Kyi which won the majority in Myanmar Parliament elections in November 2015 is?
(a) Union Solidarity and Development Party (USDP)
(b) National Unity Party (NUP)
(c) National League for Democracy (NLD)
(d) National Democratic Force (NDF)

163. Recently, where did the first 'Qute', the four wheeler from Bajaj motors register in Europe?
(a) Greece (b) Spain
(c) Turkey (d) Italy

164. Which among the following airlines from India has been recently imposed a penalty of ₹ 152 crore (approx.) by Competition Commission of India (CC1) for indulging in anti-competition practices while fixing fuel surcharge (PSC)?
(a) SpiceJet (b) Air India
(c) Jet Airways (d) IndiGo

165. Special Drawing Rights (SDR) is an international reserve asset, which was created by the — in 1969 to support the Bretton Woods exchange rate system.
(a) International Monetary Fund (IMF)
(b) Reserve Bank of India (RBI)
(c) Asian Development Bank (ADB)
(d) The World Bank

166. Who is the chairman of the 7th Pay Commission set-up by the Government of India?
(a) PV Rama Shastri (b) Prof Rathin Roy
(c) Justice A K Mathur (d) None of these

167. The Rugby's first global star from New Zealand, who has died at the age of 40 in November 2015 is
(a) Steve Tew (b) Tana Umaga
(c) Mike TtndalL (d) Jonah Lomu

168. Who among the following personalities is the ambassador and symbol of Nestle India's '100 years and running' campaign?
(a) Amitabh Bachchan (b) Fauja Singh
(c) Milkha Singh (d) Dilip Kumar

169. Which one of the following telecom companies has bought Videocon Telecom Ltd's spectrum in the Gujarat and Uttar Pradesh circles for ₹ 3310 crore in November 2015?
(a) Idea Cellular Ltd. (b) Reliance Telecom
(c) BSNL (d) Tata Telecom

170. Wistron Crop, the electronic manufacture, which devices for Blackberry and HTC has recently partnered with Indian telecom retailer and manufacture 'Optiemus' for making devices is from
(a) China (b) Singapore
(c) Australia (d) Taiwan

171. Which country has removed ban in November 2015 on nuclear exports to Iran by allowing its companies to work in Iranian enrichment sites?
(a) Singapore (b) Malaysia
(c) China (d) Taiwan

172. India has signed an MoU on cooperation in 'Cyber Security' with which of the following Asian countries in November 2015?
(a) Singapore (b) Malaysia
(c) China (d) Taiwan

173. Which is the city, where the first ever historic day-night (five day) cricket test match was played between Australia and New Zealand in November-December 2015?
(b) Perth (b) Sydney
(c) Adelaide (d) Brisbane

174. A new type of wireless internet technology that could provide a connection 100 times faster than traditional Wi-Fi but can't pass through walls is termed as_____.
(a) Li-Fi (b) Vi-Fi
(c) Xi-Fi (d) Zi-Fi

175. Which country became the first Asian to punish German automaker Volkswagon AG $12.31 million on the basis of its own emission tests and ordered test and ordered a recall of 125, 522 vehicles?

(a) India (b) Thailand
(c) South Korea (d) Taiwan

176. Indian origin Mr Antonio Costa of Socialist Party has been recently appointed as the new Prime Minister of
(a) Mexico (b) Chile
(c) Costa Rica (d) Portugal

177. How much amount is announced in November 2015 to be funded by the World Bank to the ambitious 'Skill India' initiatives?
(a) ₹ 6600 crore (b) ₹ 7500 crore
(c) ₹ 8700 crore (d) ₹ 5900 crore

178. Which one of the following banks announced in November 2015 the shutting down of private banking business in India?
(a) Citibank (b) Barclays Bank
(c) HSBC Bank (d) Deutsche Bank

179. Who among the following is the 43rd Chief Justice of India?
(a) HL Dattu (b) TS Thakur
(c) RM Lodha (d) None of these

180. Where did the meeting of National Security Advisors of India and Pakistan take place in the first week of December 2015?
(a) Paris (b) Ufa
(c) Bangkok (d) Ankara

181. Which one of the following Indian corporate house has partnered in December 2015 for the next 3 yr with US based popular not-for-profit 'Khan Academy' for free online education?
(a) Tata Group (b) Godrej Group
(c) Aditya Birla Group (d) Infosys

182. India defeated which of the following countries to win the third position in the Hero Hockey World League held in India in December 2015?
(a) Great Britain (b) Belgium
(c) Argentina (d) Netherlands

183. How much cut Sunil Mittal, Chairman, Bharti Group has taken in his annual salary to fund "Nyaya Bharti', an initiative to those who are under trial and in jail?
(a) ₹ 2 crore (b) ₹ 5 crore
(g) ₹ 7 crore (d) ₹ 9 crore

184. How much percent stake for ₹ 1664 crore agreed by global insurance major Sun Life Insurance JV in Birla Sunlife Insurance to make it 49%?
(a) 26% (b) 20% (c) 23% (d) 19%

185. Facebook co-founder and CEO Mark Zuckerberg and his wife have planned to give away 90% of their Facebook share over their lifetimes and would sell or give up to— inshare in each of the next 3 yr in charity.
(a) $ 1 billion (b) $ 2 billion
(c) $ 3 billion (d) $ 4 billion

186. World's largest lender, the Industrial and Commercial Bank of China (ICBC) and — have inked a deal in December 2015, where in the ICBC will be the strategic banking partner to the salt-to-software conglomerate.
(a) Wipro (b) Tata Group
(c) Reliance Ind. (d) ITC Ltd

187. To fight against pediatric recently, WHO has unveiled in South Africa, Strawberry and Raspberry flavoured medicine syrup customised for children.
(a) Tuberculosis (b) Polio
(c) AIDS (d) Diabetes

188. Which e-commerce company has recently acquired a strategic minority stake in 'MapMyIndia', an online digital map platform that enables GPS navigation, tracking etc?
(a) Amazon (b) Snapdeal
(c) Jabong (d) Flipkart

189. Who among the following famous TV journalists is the author of the recently released book 'The Unquiet Land: Stories from India's Fault Lines'?
(a) Barkha Dutt (b) Karan Thapar
(c) Shazia Ilmi (d) Prannoy Roy

190. Who among the following has been conferred as the Asia Champion for Disaster Risk Reduction in November 2015 by the United Nation's Office for Disaster Risk Reduction (UNISDR)?
(a) Uma Bharati (b) Kiren Rijiju
(c) Prakash Javadekar (d) Piyush Goyal

191. Government of India has opened Affordable Medicines and Reliable Implants for Treatment (AMRIT) outlet at All India Institute of Medical Sciences (AIIMS), New Delhi for selling affordable drugs for — disease (s).
(a) HIV and AIDS (b) Dengue and Malaria
(c) Cancer and Heart (d) Swine Flu and Ebola

192. Where was the 19th International Children's Film Festival of India held in November 2015?
(a) Hyderabad (b) Panji
(c) Pune (d) Delhi

193. Where did the two - day "2nd High Level Global Conference on Traffic Safety – Time of Results" take place in November 2015?
(a) South Africa (b) Brazil
(c) India (d) Russia

194. Indian Railway has issued the Letter of Award (LoA) for setting up of Electric Locomotive Factory (ELF) at Madhepura in Bihar to a/an — based company M/S Alstom Manufacturing India Limited,
(a) France (b) USA
(c) Australia (d) Turkey

195. Government of India has imposed a Swachh Bharat Cess at the rate of 0.5% on all services presently liable to service tax with effect from 2015_____.

(a) 1st November (b) 10th November

(c) 15th November (d) 25th November

196. In which of the following states of India, Sun Edition won the auction in November 2015 for a 500 Megawatt Project under National Solar Mission, to supply solar power at ₹ 4.63 per kWh?

(a) Karnataka (b) Uttar Pradesh

(c) West Bengal (d) Andhra Pradesh

197. Great Britain defeated which one of the following countries to win the Davis Cup Tennis Championship 2015?

(a) Switzerland (b) France

(c) Belgium (d) Spain

198. As per the GFMS Gold Survey in the third quarter of 2015 Review and Outlook Report published by Thompson Reuters, India has surpassed China as the world's largest gold consumer with consumption of — tonnes.

(a) 579 (b) 605 (c) 621 (d) 642

199. Who among the following golf players won the Hero World Challenge title in December 2015 organised by Tiger Woods Foundation in Bahamas?

(a) Bubba Watson (b) Petrick Reed

(c) Rickie Fowler (d) Jordan Spieth

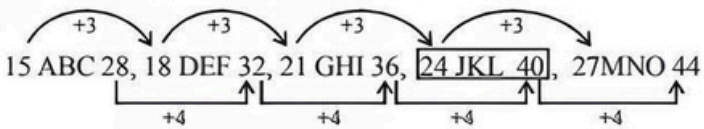
200. Which one of the following companies has bagged the new Indian Premier League (IPL) franchise for Pune for the next two years?

(a) Intex Tech (b) RPG Properties

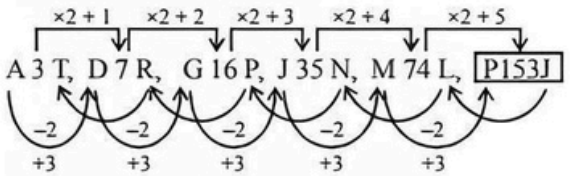
(c) Chettinad Group (d) New Rising

HINTS & EXPLANATIONS

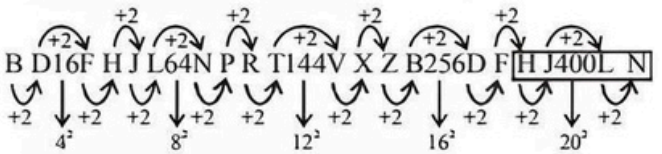
1. (a)
2. (b) Option (b) explains or gives the essence of the paragraph in short.
3. (c) 4. (a)
5. (a) Option (a) is correct option as it is able to catch the essence of the paragraph pointing towards the ability of women for multitasking and do well in whatever job they are involved.
6. (a) Slump and increased are correct words to be filled in the respective blanks as slump means fall in the price.
7. (b) Flow and use are correct words to be filled in the respective blanks.
8. (b) Hectic and fell are the correct options to be filled in here.
9. (c) Option (c) is correct as champagne is uncorked and win or victory is celebrated.
10. (b)
11. (a) There is no need to add 'of' after has been growing. We always say although there has been a growing interest in popular fiction.
12. (b) We treat 'society' as a singular word or noun and use of 'are' is incorrect here. 'is' is used with singular noun.
14. (d) use 'has' instead of 'have'.
13. (c) 'Are' is incorrect here. 'Is' is the correct verb to be used with History.
15. (c) has an error of use of relative pronoun 'that' before the words 'it urges them' as it is non-essential clause relative pronoun 'which' should be used instead of that.
16. (a) CBEAD is the correct sequence of the paragraph.
17. (a) DBEAC is the correct sequence of the paragraph.
18. (a) BEACD is the correct sequence of the paragraph.
19. (a) CDABE is the correct sequence of the paragraph.
20. (c) DCBEA is the correct sequence of the paragraph.
21. (b) Corruption is an immoral practice, hence option (b) is the correct answer
22. (d) In practising, corruption rules are ignored, social laws are manipulated and favouritism is done. Hence 'option (d)' all of the above is the correct answer.
23. (a)
24. (b) The people involved in corruption never think of national interest.
25. (c) Water pollution is caused by untreated industrial water which is discharged by the industries.
26. (b) Carbon monoxide is the poisonous gas which causes a great danger to health.
27. (c) Air and water pollution are major causes of respiratory diseases.
28. (a) The thin layer of ozone in the atmosphere is a kind of life giving system.
29. (b) Concept of *eris*, according to the ancient Greeks is a condition of opposites.
30. (a) In the passage bad *eris* is defined as violent conditions of life.
31. (d) Zeus married Thetis off because he did not want to father his own ruin,
32. (c) Zeus was of the opinion that however strong a mortal child was, he could not overthrow or kill an immortal God.
33. (c) The analogy used to describe the communications network among the cells in the immune system is like bees swarming around a hive.
34. (b) This state is known as self-tolerance.
35. (c) Allergen is the specific term.
36. (d) Through characteristic shapes on the antigen surface the cells in the immune system recognise an antigen as foreign or non-sell.
37. (b) When crows use sticks to pry peanuts out of cracks they show the intelligence to use tools.
38. (a) The word upsurge as used in the paragraph mean increasingly large amount.
39. (d) Chimpanzees and gorillas have been trained to use sign language or geometric shapes that stand for words.
40. (b) Using cues is not a sign of animal intelligence.
41. (a) The pattern is as follows:



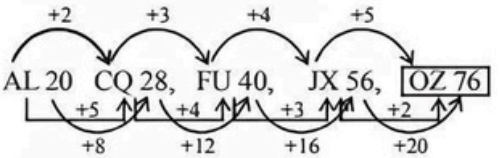
42. (c) The pattern is as follows:



43. (b) The pattern is as follows:-



44. (c) The pattern is as follows:



45. (c) The pattern is as follows

$$\left(\frac{4+12}{2}\right)+2=\boxed{10};\left(\frac{6+18}{2}\right)+2=\boxed{14}$$

and

R X S M

$\left(\frac{18+24}{2}\right)+2 = \boxed{23}$; $\left(\frac{19+13}{2}\right)+2 = \boxed{18}$

Similarly

K M P V

$\left(\frac{11+13}{2}\right)+2 = \boxed{14}$; $\left(\frac{16+22}{2}\right)+2 = \boxed{21}$

Sol. (46 – 48) : The given information can be tabulated as follows

Person	Game	Hobby
Akshay	Cricket	Singer
Bhushan	Hockey	Painter
Chanderjeet	Cricket	Painter
Dhiraj	Hockey	Dancer

46. (c) Akshay is a singer.
47. (c) 'Hockey and dancing' is the correct relationship of the game and fine arts hobby of Dhiraj.
48. (c) From the table it is clear that Chanderjeet plays cricket and is interested in painting.

Sol. (49–51) According to the given information, the correct arrangement is as follows.

A	Blue pottery
B	Lovely gardens
C	Fancy jewellery
D	Scents
E	Educational institutes

49. (c) City A is famous for blue pottery.
50. (d) City E is famous for educational institutes.
51. (c) From the above table it is clear that B is famous for lovely gardens.

Sol. (52–54)

Left	Dharmender	Anil	Farmaan
Right	Chander	Alexander	Brijend

52. (c) 53. (b) 54. (c)

Sol. (55–57)

Course	Lecturer	Month
A	Q	March
B	P	February
C	T/S	March/April
D	T/S	March/April
E	R	January

55. (c) From the above table it is clear that the course taught by S is either C or D.
56. (a) The course of lecturer Q immediately follows after course B.
57. (c) Course E is taught in the month of January.

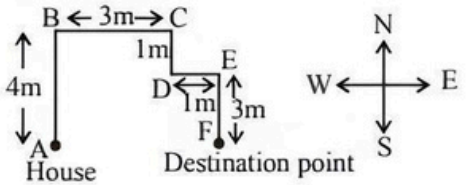
Sol. (58–60)

Person	Profession	Day
Piyush	Doctor	Monday
Rajeev	Teacher	Tuesday
Kadir Khan	Engineer	Wednesday/Saturday
Urvashi	Lawyer	Thursday
Sunanda	Nurse	friday
Trilochan	Bank Manager	Saturday/Wednesday

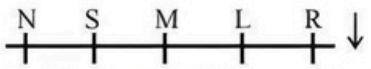
58. (d) All combinations are correct.
59. (a)
60. (b) Sunanda is the Nurse in the family.
61. (b) According to the given statement, only conclusion I follows.
62. (a) When Repo Rate is increased the inflation will decrease and vice-versa. So, conclusion I does not follow, only conclusion II follows.
63. (b) According to the given statement, only conclusion I follows.
64. (d) According to the given statement, both conclusions I and II follow.
65. (e) According to the given statement, neither conclusion I nor II follows.
66. (d) After reading the given passage carefully we conclude that the option (d) is not with the contents of the given passage.
67. (a) After reading the given passage, we can say that the option (a) is not with contents of the given passage.
68. (d) After reading the given passage, we find that the passage does not discuss about the electronic waste. So. we can say that the option (d) is not with the contents of the given passage.
69. (c) After reading the given passage carefully we can conclude that the option (c) is not with the contents of the given passage.
70. (c) According to the given information, the arrangement of five persons is shown below

where.
SM = Senior Manager
DM = Deputy Manager
DGM = Deputy General Manager
AGM = Assistant General Manager
GM = General Manager
So, as per the arrangement, the position of Deputy General Manager (DGM) is third from the left.

71. (b) According to the given information, we can draw a direction graph as shown below



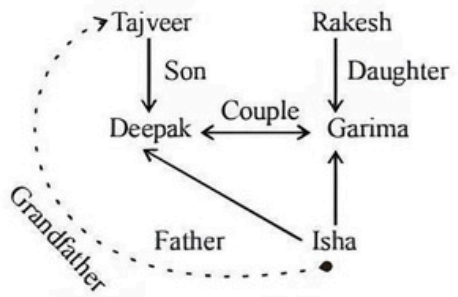
∴ Distance between starting and destination points,
AF = BC + CE
= 3 + 1 = 4 m

72. (c) 

So, it is clear that 'M' is occupying the middle position in the row.

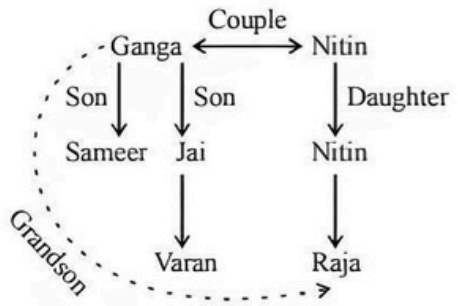
73. (c) My sister's father's son-in-law's wife will be my sister. So, the lady in the photograph is sister of Dev.

74. (a) According to given information, we can draw a blood relation graph as shown below



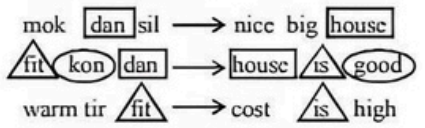
So, Tejveer is grandfather of Isha.

75. (c) According to the given information in the question, we can draw a blood relation graph as shown below



So, it is clear from the above blood relation graph that Raja is the grandson of Ganga.

76. (d) According to the question.



From the above code language.
house → dan
is → ftt
good → kon
So, 'kon' stands for 'good'.

77. (a) 78. (c) 79. (b) 80. (a)

81. (c) The ways in which one or more balls can be put in the bocket are as follows:
0 or 1 or 2 or ... or 10 white balls and 0 or 1 or 2 or ..... or 8 red balls and 0 or 1 or 2 or ..... or 6 green balls.
Hence required number of ways = 11 × 9 × 7 − 1
= 693 − 1 = 692

82. (a) Number of green dyes = 5
Number of blue dyes = 4
Number of red dyes = 3
Hence, required number of ways = $(2^5 - 1)(2^4 - 1)2^3$
$= (32-1)\times(16-1)\times 8 = 31\times 15\times 8 = 3720$

83. (d) We can see that, an elector can vote for at the most 2 candidates as there are 2 vacancies.

Hence required number of ways = ${}^{10}C_2 + {}^{10}C_1$

$$= \frac{10!}{8!2!} + \frac{10!}{9!} = \frac{10\times 9}{2} + 10 = 45 + 10 = 55$$

84. (a) Total number of bits of papers required = 4!
$= 4\times 3\times 2 = 24$

85. (b) Number of words having atleast one letter repeated
= Total number of words − Total number of words in which no letter is repeated
$= 10^5 - {}^{10}P_5$

86. (b) Probability that part A is defective $= \frac{9}{100}$

So, probability that part A is not defective

$$= 1 - \frac{9}{100} = \frac{91}{100}$$

Probability that part B is defective $= \frac{5}{100}$

So, probability that part B is not defective

$$= 1 - \frac{5}{100} = \frac{95}{100}$$

Hence, required probability $= \frac{91}{100}\times\frac{95}{100} = 0.86$

87. (a) Total number of ways of selecting a number
$= 16\times 16 = 256$
Total number of ways in which A and B can win = 16

∴ Probability of winning the prize $= \frac{16}{256} = \frac{1}{16}$

Hence, probability that they will not win the prize in a single trial $= 1 - \frac{1}{16} = \frac{15}{16}$

88. (a) Let E_1 = Both A and B speak truth
E_2 = Both A and B speak false
and E = A and B agree in a statement

we can see, $P(A) = \frac{75}{100} = \frac{3}{4}$

and $P(B) = \frac{80}{100} = \frac{4}{5}$

So, $P(E_1) = \frac{3}{4}\times\frac{4}{5} = \frac{3}{5}$, $P(E_2) = \frac{1}{4}\times\frac{1}{5} = \frac{1}{20}$

Clearly, $P(E/E_1) = 1$ and $P(E/E_2) = 1$

$$\therefore \quad P\left(\frac{E_1}{E}\right)=\frac{P(E_1)P(E/E_1)}{P(E_1)P(E/E_1)+P(E_2)P(E/E_2)}$$

$$=\frac{\frac{3}{5}\times 1}{\frac{3}{5}+\frac{1}{20}}=\frac{12}{13}$$

89. (c) Let P and Q together take x hours to complete the work.
Then, time taken by P alone $=x+8$
and time taken by Q alone $=x+\frac{9}{2}$
According to the question,

$$\frac{1}{(x+8)}+\frac{1}{\left(x+\frac{9}{2}\right)}=\frac{1}{x}$$

$$\Rightarrow \quad \frac{1}{(x+8)}+\frac{2}{(2x+9)}=\frac{1}{x}$$

$$\Rightarrow \quad \frac{2x+9+2x+16}{(x+8)(2x+9)}=\frac{1}{x}$$

$$\Rightarrow \quad x(4x+25)=2x^2+72+16x+9x$$
$$\Rightarrow \quad 4x^2+25x=2x^2+72+25x$$
$$\Rightarrow \quad 2x^2=72$$
$$\Rightarrow \quad x^2=36$$
$$\Rightarrow \quad x=6h$$

90. (d) Let time taken by Sharavan to stitch the suit be x hours.
So, time taken by Sapan to stitch the suit $=\{x-3\}$
According to the question,

$$\frac{4}{x-3}+\frac{10}{x}=1$$

$$\Rightarrow \quad 4x+10x-30=x^2-3x$$
$$\Rightarrow \quad x^2-17x+30=0$$

$$\Rightarrow \quad x=\frac{17\pm\sqrt{(17)^2-4\times 30}}{2}$$

$$=\frac{17\pm\sqrt{289-120}}{2}$$

$$=\frac{17\pm 13}{2}=\frac{30}{2}=15h$$

91. (b) Let A and B together complete the work x days.
Then, time taken by A alone to complete the work $=(x+27)$ days
Also, time taken by B alone to complete the work $=(x+3)$ days
According to the question,

$$\frac{1}{(x+27)}+\frac{1}{(x+3)}=\frac{1}{x}$$

$$\Rightarrow \quad \frac{(x+3)+(x+27)}{(x+27)(x+3)}=\frac{1}{x}$$

$$\Rightarrow \quad x(2x+30)=x^2+30x+81$$
$$\Rightarrow \quad 2x^2+30x=x^2+30x+81$$
$$\Rightarrow \quad x^2=81$$
$$\Rightarrow \quad x=9 \text{ days}$$

92. (a) Single discount allowed by A

$$=\left(30+16-\frac{30\times 16}{100}\right)\%$$

$$=\left(46-\frac{48}{10}\right)\%=41.2\%$$

single discount allowed by B

$$=\left(20+26-\frac{20\times 26}{100}\right)\%$$

$$=\left(46-\frac{52}{10}\right)\%=40.8\%$$

Hence, discount given by A is more advantageous to the purchaser.

93. (a) Let cost price of article be ₹ x
Here, profit = 17.5%

$$\therefore \text{ SP}=\left(\frac{100+\text{Profit }\%}{100}\right)\times \text{CP}=₹\frac{117.5}{100}x$$

Now, let new CP be ₹ x

So, $x'=₹\frac{92}{100}x$

and new profit = 30%
According to tothe question,

$$\frac{130}{100}\times\frac{92}{100}x-\frac{117.5x}{100}=11.55$$

$$\Rightarrow \quad 130\times 92x-117.54x\times 100=11.55\times 10000$$
$$\Rightarrow \quad 11960x-117.50x=115500$$
$$\Rightarrow \quad 210x=115500$$
$$\Rightarrow \quad x=₹\ 550$$

94. (a) Here, Marked Price (MP) = ₹ 65
Selling Price (SP) = ₹ 56.16
So, first discount = 10%

$$\text{So, SP after first discount}=\left(\frac{100-\text{Discount}\%}{100}\right)\times \text{MP}$$

$$=\frac{90}{100}\times 65=Rs.58.5$$

$$\therefore \quad \text{Second discount}=\frac{58.5-56.16}{58.5}\times 100\%$$

$$=\frac{2.34}{58.5}\times 100\%=4\%$$

95. (c) Discount = 15%

Price of garments after getting discount = ₹ 25000

$\therefore \quad 25000 = \frac{(100-15)}{100} \times MP$

$\Rightarrow \quad MP = \frac{2500000}{85} \approx Rs\,29412$

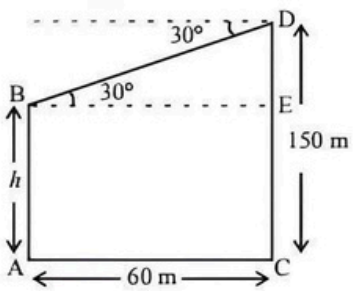
Now, Profit = 8%

$\therefore$ Required total SP $= \left(\frac{100+8}{100}\right) \times 29412$

$= \frac{108}{100} \times 29412 \approx ₹\,31000$

96. (b) Let the height of first building be h m.

So, DE = (150 – h) m



Also, $\frac{DE}{EB} = \tan 30°$

$\Rightarrow \quad \frac{150-h}{60} = \frac{1}{\sqrt{3}}$

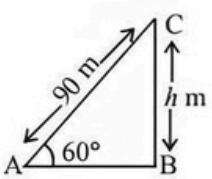
$\Rightarrow \quad 150 - h = \frac{60}{\sqrt{3}}$

$\Rightarrow \quad h = 150 - \frac{60}{\sqrt{3}}$

$\Rightarrow \quad h = 150 - \frac{60\sqrt{3}}{3}$

$= (150 - 20\sqrt{3})$ m

97. (a) Let the height of kite be h m.

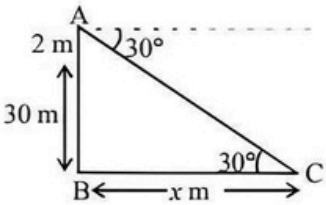


Then, $\sin 60° = \frac{h}{90}$

$\Rightarrow \quad \frac{\sqrt{3}}{2} = \frac{h}{90}$

$\Rightarrow \quad h = 45\sqrt{3}$ m

98. (c) Let the horizontal distance of kite from the building be x m.

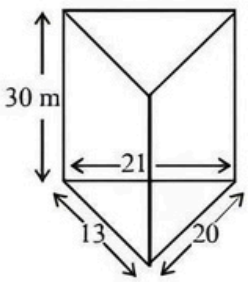


Then, $\tan 30° = \frac{32}{x}$

$\Rightarrow \quad \frac{1}{\sqrt{3}} = \frac{32}{x}$

$\Rightarrow \quad x = 32\sqrt{3} = 55$ m

99. (a)



Area of a triangle $= \sqrt{s(s-a)(s-b)(s-c)}$

Here, a = 13, b = 20 and c = 21

$\therefore \quad s = \frac{13+20+21}{2} = \frac{54}{2} = 27$

$\therefore$ Area of the triangle

$= \sqrt{27(27-13)(27-20)(27-21)}$

$= \sqrt{27 \times 14 \times 7 \times 6}$

$= \sqrt{3 \times 3 \times 3 \times 7 \times 2 \times 7 \times 2 \times 3}$

$= 9 \times 2 \times 7 = 126\,m^2$

So, area of both the triangles = 2 × 126 = 252 m²

Now, area of sides = 30 × 13 + 30 × 20

= 390 + 600 = 990 m²

and area of rectangle = 30 × 21 = 630 m²

Hence, total surface area of triangular prism

= 252 + 990 + 630 = 1872 m²

100. (c) Volume of cistern = 2.4 × 2 × 1.5 = 7.2 m³

and time = 2 h 30 min = 9000 s

$\therefore$ Required rate $= \frac{7.2 \times 10^6\,cm^3}{9000\,s} = 800\ cm^3/s$

101. (b) Volume of the water required to pass through pipe in 1 min

$= \frac{440}{10} = 44m^3$

speed of water = 7m/min.

Volume of the water per minute = $\pi r^2 h$

$\therefore \quad 44 = \frac{22}{7} \times r^2 \times 7$

$\Rightarrow \quad r^2 = \frac{44 \times 7}{22 \times 7} = 2$

$\Rightarrow \quad r = \sqrt{2} m$

102. (a) Part of tank filled by A in 1 hour = $\frac{1}{20}$

Part of tank filled by B in 1 hour = $\frac{1}{30}$

$\therefore$ Part of tank filled by A and B in 1 h

$= \frac{1}{20} + \frac{1}{30} = \frac{5}{60} = \frac{1}{12}$

$\therefore$ Time taken to fill $\frac{1}{3}$ rd tank by A and B

$= 12 \times \frac{1}{3} = 4 \text{ h}$

Now, part of tank emptied by leak in 1 h = $\frac{1}{12} \times \frac{1}{4} = \frac{1}{48}$

$\therefore$ Part of tank filled by A, B and leak in 1 $h = \frac{1}{12} - \frac{1}{48}$

$= \frac{4-1}{48} = \frac{3}{48} = \frac{1}{16}$

Remaining part to be filled = $\frac{2}{3}$

Time taken to fill remaining tank = $16 \times \frac{2}{3} = \frac{32}{3} h$

$\therefore$ Total time taken to fill the tank = $\frac{32}{3} + 4 = \frac{44}{3} = 14\frac{2}{3} h$

103. (c) Let three pipes be A, B and C and time taken to fill the tank by pipes A, B and C be a, b and c hours. respectively,
According to the question,
$b = a - 5$ and $b = c + 4$
$a = b + 5$ and $c = b - 4$

Now, $\frac{1}{a} + \frac{1}{b} = \frac{1}{c}$

$\Rightarrow \quad \frac{1}{b+5} + \frac{1}{b} = \frac{1}{b-4}$

$\Rightarrow \quad \frac{2b+5}{b^2+5b} = \frac{1}{b-4}$

$\Rightarrow \quad 2b^2 - 8b + 5b - 20 = b^2 + 5b$

$\Rightarrow \quad b^2 - 8b - 20 = 0$

$\therefore \quad b = \frac{8 \pm \sqrt{(8)^2 + 4 \times 20}}{2}$

$= \frac{8 \pm \sqrt{64 + 80}}{2} = \frac{8 \pm \sqrt{144}}{2}$

$= \frac{8 \pm 12}{2}$

$= \frac{8+12}{2} = \frac{20}{2} = 10 \text{ h}$

Hence, time required by first pipe = b + 5 = 10 + 5 = 15 h

104. (a) Let the filling capacity of pump be x m³/min.
Then, emptying capacity = $(x + 10)$ m³/min
Total capacity of tank = 2400 m³
According to the question,

$\frac{2400}{x} - \frac{2400}{(x+10)} = 8 \Rightarrow \div 8$

$\Rightarrow \quad 2400x + 2400 - 2400x = (x^2 + 10x) \times 8$

$\Rightarrow \quad 24000 = 8x^2 + 80x$

$\Rightarrow \quad 8x^2 + 80x - 24000 = 0$

$\Rightarrow \quad x^2 + 10x - 3000 = 0$

$x = \frac{-10 \pm \sqrt{10^2 + 4 \times 3000}}{2}$

$x = \frac{-10 \pm \sqrt{100 + 12000}}{2}$

$x = \frac{-10 \pm \sqrt{12100}}{2}$

$x = \frac{-10 \pm 110}{2}$

$x = \frac{-10 - 110}{2} \neq$ discarded

$x = \frac{-10 + 110}{2} = 50$

105. (b) Let the original speed of train be x km/h.

Then, new speed = $\frac{7x}{11}$ km/h

[given]
New time = 22 h
Distance = New speed × New time

$\frac{7x}{11} \times 22 = 14x \text{ km}$

Original time = $\frac{\text{Distance}}{\text{Original speed}} = \frac{14x}{x} = 14 \text{h}$

$\therefore$ Required time = 22 − 14 = 8 h

Alternative Method

Speed Ratio $= \frac{7}{11}$

Time R $= \frac{11}{7}$

Time $= 11x\ 7x$

$11x = 22$

$7x = 7 \times 2 = 14$

time saved $= 22 - 14 = 8$

106. (d) Let speed $= x$

$D = R.S \times \text{time} = R.S_1 \times t_1 = R S_2 \times t_2$

$$(x-4.5)\frac{84}{60\times 60} = (x-5.4)\times\frac{85}{60\times 60}$$

$84x - 378 = 85x - 459$

$459 - 378 = x$

$81 = x$

107. (a) Let length of train 2ℓ and ℓ

$$\frac{2\ell+\ell}{(48+42)\times\frac{5}{18}} = 12$$

$$\frac{3\ell}{90\times 18} = 12$$

$$\ell = 12\times\frac{25}{3} = 100\text{m}$$

$2\ell = 200$ m

Platform length $= P$

$$\frac{200+P}{48\times\frac{5}{18}} = 45$$

$$200 + P = 45\times\frac{40}{3} = 600$$

$P = 600 - 200 = 400$

108. (a) The interest earned in 10 yr on ₹ 1000 at 5% per annum $= \frac{1000\times 5\times 10}{100} =$ ₹ 500

The principal now becomes

$=$ ₹ $(1000 + 500) =$ ₹ 1500

Now, we need to find the time in which ₹ 1500 becomes ₹ 2000.

Given, P $=$ ₹ 1500 and A $=$ ₹ 2000

We know that $A = P + \frac{P\times r\times t}{100}$

$$\Rightarrow\quad 2000 = 1500 + \frac{1500\times 5\times t}{100}$$

$$\Rightarrow\quad t = 500\times\frac{100}{1500}\times 5 = 6\frac{2}{3}\text{ yr}$$

109. (a) Let sum x y z

$$\frac{1(5)x}{100} = \frac{2(5)y}{100} = \frac{3(5)z}{100} = k$$

$$= x = \frac{100k}{5};\ y = \frac{100k}{100};\ z = \frac{100k}{15}$$

$$\frac{100}{5}k + \frac{100k}{10} + \frac{100k}{15} = 7700$$

$$\frac{k}{5} + \frac{k}{10} + \frac{k}{15} = 77$$

$$\frac{11k}{3} = 77$$

$k = 210$

$$\frac{100(210)}{5} - \frac{100(210)}{15}$$

$$= 210(100)\left[\frac{3-1}{15}\right] = 1400\times 2 = 2800$$

110. (a) Principal for 1st year $=$ ₹ 4000, Rate (r) $= \frac{15}{2}\%$

Interest for 1st year $= \frac{4000\times 15}{2\times 100} =$ ₹ 300

Principal for 2nd year $= (4000 + 300) - 1500 =$ ₹ 2800

$\Rightarrow$ Interest for 2nd year $= \frac{2800\times 15}{2\times 100} =$ ₹ 210

Principal for 3rd year $= (2800 + 210) - 1500 =$ ₹ 1510

$\Rightarrow$ Interest for 3rd year $= \frac{1510\times 15}{2\times 100} =$ ₹ 113.25

So, amount owed by man $= (1510 + 113.25) - 1500$

$=$ ₹ 123.25

111. (c) Given, A : B : C $= 12 : 15 : 25$

Let $A = 12x$, $B = 15x$, $C = 25x$

According to the question,

$12x + 52x + 25x = 312$

$\Rightarrow\ 52x = 312$

$$\Rightarrow\ x = \frac{312}{52} = 6$$

$\therefore$ $A = 12x = 72$,

$B = 15x = 90$

and $C = 25x = 150$

$\therefore$ required ratio $= (B - A) : (C - B)$

$= (90 - 72) : (150 - 90)$

$= 18 : 60 = 3 : 10$

or shortcut method

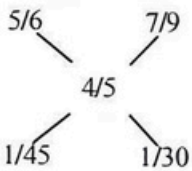
$$\frac{15-12}{25-16} = \frac{3}{10}$$

112. (a) Milk in first container $= \frac{5}{6}$

milk in second container $= \frac{7}{9}$

$\therefore$ Ratio of milk in final mixture $= \frac{80}{100} = \frac{4}{5}$

Using the alligation rule,



$\therefore$ Required ratio $= \frac{1/45}{1/30} = \frac{30}{45} = 2:3$

113. (c) Average of first three friends = 15

$\Rightarrow$ Total score of first three friends $= 15 \times 3 = 45$

Average of last three friends = 16

$\Rightarrow$ Total score of last three friends $= 16 \times 3 = 48$

Total score of four friends $= 45 + 19 = 64$

$\therefore$ Score of first friend $= 64 - 48 = 16$

Hence, required percentage $= \frac{16}{48} \times 100\% = 33\frac{1}{3}\%$

114. (b) Average score in 100 matches = 36

and total score in 100 matches = 3600

$\therefore$ Correct score $= 3600 - 40 + 90 = 3650$

$\therefore$ Percentage error $= \frac{3650 - 3600}{3650} \times 100\% = 1.36\%$

115. (b) Let the number be x.

According to the question,

$x = 17q_1 + 12$

Also, $x = 11q_2 + 8$

$\Rightarrow 17q_1 + 12 = 11q_2 + 8$

$\Rightarrow 17q_1 - 11q_2 = -4$

$\Rightarrow 11q_2 - 17q_1 = 4$

The above equation is satisfied when $q_2 = 5$ and $q_1 = 3$.

Now, $x = 17q_1 + 12$

$= 17 \times 3 + 12 = 51 + 12 = 63$

When 63 is divided by 23, then the remainder is 17.

116. (d) Let the angle C be x.

So, $\angle A = 2x$

Also, $\angle B - \angle D = \frac{2x}{3}$

Opposite angles of a cyclic quadrilateral are supplementary.

i.e. $\angle A + \angle C = 180°$

$\Rightarrow 2x + x = 180°$

$\Rightarrow 3x = 180°$

$\Rightarrow x = 60°$

$\therefore \angle A = 2x = 120°$

and $\angle B - \angle D = \frac{120°}{3} = 40$ .....(i)

Also, $\angle B + \angle D = 180°$ .....(ii)

(i) and (ii), we get $\angle D = 70°$ and $\angle B = 110°$

$\therefore$ Maximum difference $= 120° - 60° = 60°$

117. (b) Length of circle with 4 balloons = 10 cm

$\Rightarrow 2\pi r = 10$

$\Rightarrow r = \frac{5}{\pi}$

Radius of innermost circle = 5 cm

$\therefore$ Number of balloons in a circle of radius 5 cm $= 4\pi$

Similarly, number of balloons in a circle of radius 16 cm

$= \frac{4}{5} \times 16\pi = \frac{64}{5}\pi$ [12 circles are to be formed]

So, $4\pi, \frac{24\pi}{5}, ..., \frac{64\pi}{5}$ forms an AP with $a = 4\pi$,

$l = \frac{64\pi}{5}$ and $n = 12$.

$\therefore$ Total number of balloons $= \frac{n}{2}[a + l]$

$= \frac{12}{2}\left[4\pi + \frac{64\pi}{5}\right]$

$= 6\left[\frac{20\pi + 64\pi}{5}\right]$

$= 6 \times \frac{84\pi}{5} \approx 317$

118. (d) Let number of CDs bought be x.

CP = ₹ 1800

CP of each CD = ₹ $\frac{1800}{x}$

It is given that the man sold $(x - 1)$ CDs at a profit of ₹ 6 each.

Now, SP = ₹ $\left(\frac{1800}{x} + 6\right)(x - 1)$

$\therefore$ Profit = SP − CP

$\Rightarrow 114 = \left(\frac{1800}{x} + 6\right)(x - 1) - 1800$

$\Rightarrow 114 = \frac{(1800 + 6x)(x - 1) - 1800x}{x}$

$\Rightarrow 114x = 1800x + 6x^2 - 1800 - 6x - 1800x$

$\Rightarrow 114x = 6x^2 - 6x - 1800$

$\Rightarrow 6x^2 - 120x - 1800 = 0$

$$\Rightarrow \quad x = \frac{120 \pm \sqrt{(120)^2 + 4 \times 6 \times 1800}}{12}$$

$$= \frac{120 \pm \sqrt{14400 + 43200}}{12}$$

$$= \frac{120 \pm 240}{12} = \frac{360}{12} = 30$$

Hence, total number of CDs bought is 30.

Alternative Method

$$1800 - \frac{1800}{x} 6x - 6 = 114$$

$$6x - \frac{1800}{x} = 120$$

$$6x - \frac{-1800}{x} = 120$$

$$x - \frac{300}{x} = 20$$

$$x^2 - 20x - 300 = 0$$

$$\frac{20 \pm \sqrt{400 + 1200}}{2}$$

$$20 \pm \frac{40}{2} = 30$$

119. (d) Let the side of first square = a m
and the side of second square = b m
According to the question,

$$29a^2 = 6b^2 - 1 \qquad \text{.....(i)}$$

Also, $9a = 4b + 1$

$$\Rightarrow a = \frac{4b+1}{9} \qquad \text{.....(ii)}$$

putting the value of a in Eq. (i), we get

$$29\left(\frac{4b+1}{9}\right)^2 = 6b^2 - 1$$

$$\Rightarrow 29\left(\frac{16b^2 + 1 + 8b}{81}\right) = 6b^2 - 1$$

$$\Rightarrow \frac{464b^2 + 29 + 232b}{81} = 6b^2 - 1$$

$$\Rightarrow 464b^2 + 29 + 232b = 486b^2 - 81$$

$$\Rightarrow 22b^2 - 232b - 110 = 0$$

$$b = \frac{232 \pm \sqrt{(232)^2 + 4 \times 22 \times 110}}{2 \times 22}$$

$$= \frac{232 \pm \sqrt{53824 + 9680}}{44} = \frac{232 \pm 252}{44} = \frac{484}{44} = 11$$

putting the value of b in Eq. (ii), we get

$$a = \frac{4b+1}{9} = \frac{4 \times 11 + 1}{9} = \frac{45}{9} = 5$$

$\therefore$ Difference in sides of squares = b – a = 11 – 5 = 6 m

120. (a) Let initial speed of car be x km/h
So, final speed of car $= (x + 10)$ km/h
Also, distance = 75 km
According to the question,

$$\frac{75}{x} - \frac{75}{x+10} = \frac{1}{4}$$

$$\Rightarrow \frac{75(x+10) - 75x}{x(x+10)} = \frac{1}{4}$$

$$\Rightarrow 75x + 750 - 75x = \frac{x^2 + 10x}{4}$$

$$\Rightarrow 750 \times 4 = x^2 + 10x$$

$$\Rightarrow x^2 + 10x - 3000 = 0$$

$$\therefore \quad x = \frac{-10 \pm \sqrt{10^2 + 4 \times 3000}}{2}$$

$$= \frac{-10 \pm \sqrt{100 + 12000}}{2} = \frac{-10 \pm 110}{2}$$

$$= \frac{100}{2} = 50 \text{ km/h}$$

Hence, required time $= \frac{300}{(50+10)} = \frac{300}{60} = 5\text{h}$

121. (a) Average readership per magazine in 2014

$$= \frac{(3800 + 1700 + 2500 + 850)\text{hundred}}{65}$$

$$= \frac{8850\text{hundred}}{65}$$

$$= \frac{885000}{65} = 13615 \approx 13400$$

122. (a) Number of magazines in the year 2012
$= (12 + 10) + (3 + 2) + (3 + 4) + (4 + 2) = 40$
and number of magazines in the year 2014
$= (17 + 15) + (7 + 4) + (5 + 7) + (6 + 4) = 65$
$\therefore$ Number of magazines added = 65 – 40 = 25

123. (c) Number of added Hindi magazies between 2012 to 2013
= 26 – 18 = 8
number of added English magazines between 2012 to 2015
= 30 – 22 = 8

$\therefore$ Required ratio $= \frac{8}{8} = 1 : 1$

124. (d) Readership per magazine in 2012 and 2013 for various categories is shown below.

Category 2012		Year 2013
General	100	107
Sports	120	107
Film	200	191
Business	67	69

So, it is clear from the above table that the readership per magazine declined for 'Film'.

125. (b) Readership of English sports magazines in 2012 $=400$

Readership during 2012-15 for English sports magazine $=400+600+1000+1200=3200$

$\therefore$ Required ratio $=\frac{400}{3200}=\frac{1}{8}$

126. (a) Total processing cost for water, for industrial, energy and domestic usage in 2012

$$=25\times\frac{3}{10}+26\times\frac{5}{10}+30\times\frac{2}{10}=7.5+13+7$$

$=27.5$

Total processing cost for above mentioned usage in

$$2014=49\times\frac{3}{10}+35\times\frac{5}{10}+30\times\frac{2}{10}$$

$=14.7+17.5+6$

$=38.2$

$\therefore$ Required ratio $=\frac{27.5}{38.2}\approx 0.72$

127. (d) Required percentage increase

$$=\frac{35-26}{26}\times 100\%=34.6\%$$

128. (d) Required irrigation usage percentage

$$=\frac{\text{Irrigation}}{\text{Total usage}}\times 100\%=\frac{490}{629}\times 100\%=77.90\%$$

129. (d) Percentage of domestic usage in 2012

$$=\frac{35}{531}\times 100\%=6.59\%$$

Percentage of domestic usage in 2015

$$=\frac{30}{629}\times 100\%=4.76\%$$

$\therefore$ Required difference $=6.59-4.76=1.82$

130. (a) Industrial sector shows the highest percentage increase in usage from 2012 to 2015.

$\therefore$

$$\text{Required percentage increase}=\frac{49-25}{25}\times 100\%$$

$=96\%$

131. (b)

Column A	Column B
$(16, 4+8\times 2-8)$	$(3\times 4+1, 5-3)$
$=4+16-8$	$=\left(12+\frac{1}{5}-3\right)=12$
	$=\left(\frac{60+1-15}{5}\right)=9.2$

So, the quantity in column A is greater.

132. (b)

Column A	Column B
$\frac{0.01}{0.1}=0.1$	0.01 times $0.1=0.01\times 0.1=0.001$

So, the quantity in column A is greater.

133 (a)

Column A

Column B

$$\sqrt[9]{\frac{1}{3}}=\left(\frac{1}{3}\right)^{1/9}\quad \sqrt[6]{\frac{1}{2}}=\left(\frac{1}{3}\right)^{\frac{2}{9\times 2}}$$

$$=\left(\frac{1}{2}\right)^{\frac{3}{6\times 3}}=\sqrt[18]{\left(\frac{1}{3}\right)^2}=\sqrt[18]{\frac{1}{9}}\quad =\sqrt[18]{\left(\frac{1}{2}\right)^3}=\sqrt[18]{\frac{1}{8}}$$

So, the quantity in column B is greater.

134. (b)

Column A

Column B

Semi-circumierence of a Circumference of a circle with radius 10 cm circle with radius 5 cm

$$=\frac{2\pi r}{2}+2r=10\pi+20=2\pi r=10\pi$$

So, the quantity in column A is greater.

135. (b)

Column A

Column B

Circumference of a circle

Perimeter of a square with radius 1 cm whose side is 1.5 cm

$=2\pi r=2\pi\times 1=6.28cm$

$=48=4\times 1.5=6$ cm

So, the quantity in column A is greater.

136. (d) The amount of private placement raised as a percentage of total funds, raised in the year 2010-11

$$=\frac{7568}{42478}\times 100\%=17.8\%$$

In the year 2011-12

$$=\frac{11715}{51803}\times 100\%=22.65\%$$

In the year 2013-14

$$=\frac{7572}{23337}\times 100\%=32.44\%$$

In the year 2014-15

$$=\frac{6452}{11271}\times 100\%=57.24\%$$

So, the amount was maximum in 2014-15.

137. (b) Total amount of funds raised in the year 2011-12
= ₹ 51803 crore
Similarly, in the year 2014-15 = ₹ 11271 crore
In the year 20010-11 = ₹ 42476 crore
In the year 2013-14 = ₹ 23337 crore
So, the total amount of funds raised was least in the year 2014-15.

138. (d) The average amount raised by way of public issue for the period 2010-11 to 2014-15 excluding the period 2011-12 is

$$= \frac{20170+18375+13010+2575}{4}$$

$$= \frac{54130}{4} = ₹\ 13532 \text{ crore}$$

139. (a) Total amount raised by public issue
$=20170+26430+18375+13010+2575=80560$
Total amount raised
$=42476+51803+32597+23337+11271=161484$

$$\therefore \text{ Required percentage} = \frac{80560}{161484}\times 100\% = 49.9\%$$

140. (b) Required percentage decrease

$$= \frac{13658-7598}{13658}\times 100\%$$

$$= \frac{6060}{13658}\times 100\% = 44.4\%$$

141. (a) Total production $= 40+30+50+40+60=220$
Average production of 2012-15

$$= \frac{30+50+40+60}{4} = \frac{180}{4} = 45$$

$$\therefore \text{ Required percentage} = \frac{45}{220}\times 100\% = 20\%$$

142. (c) Percentage change for the years

$$2011\text{-}12 = \frac{5-3}{3}\times 100\% = 66.67\%$$

$$2012\text{-}13 = \frac{5.25-5}{5}\times 100\% = 5\%$$

$$2016\text{-}15 = \frac{6-5.25}{5.25}\times 100\% = \frac{0.75}{5.25}\times 100\% = 14.28\%$$

$$2014\text{-}15 = \frac{6-3.75}{6}\times 100\% = \frac{2.25}{6}\times 100\% = 37.5\%$$

143. (b) Production in the year 2013 = 50000

$$\therefore \text{ Required percentage} = \frac{50000}{300000}\times 100\% = 16.7\%$$

144. (d) Production in the year 2011 = 30000

$$\text{and car sold} = \frac{30000\times 80}{100} = 24000$$

$$\therefore \text{ Revenue} = 24000\times 500000 = ₹\ 1200 \text{ crore}$$

145. (c) Total production in 2011 = 40000

$$\text{Now, rejection} = \frac{40000\times 10}{100} = 4000$$

and sales = Production – Rejection
$=40000-4000=36000$
Turnover $= 36000\times 300000 = ₹\ 1080$ crore

146. (d) Given that, 25% of South Asian children under the age of 18 work as labourers or 125 million children in the job market.
25%=125

$$100\% = \frac{125\times 100}{25} = 500$$

So, the number of children below the age of 18
= 500 million

147. (d)

148. (a) 50% of world's illiterate live in South Asia.

149. (c) Ten out of 100 infants die at infancy and four more die before attainting the age of live years.
Hence, 4% of infants born in South Asia do not survive beyond the age of 5.

150. (d) $$\text{Required rate} = \frac{53-46}{46}\times 100\% = 15.2\%$$

151. (a) We have, $x^2-4x+3.75=0$
On solving the above equation, we get
$x = 2.5$ and 1.5
So, only Statement II is sufficient.

152. (c) From Statement I,
D > (A,C)
From Statement II,
E > B > D
Now, from Statements I and II.
E > B > D > (A, C)
∴ E got the maximum marks.
So, both statements are required.

153. (c) From Statement I,
Let CP = ₹ x. then SP= ₹ $1.25x$
From Statement II,
Profit = ₹ 100 on every 5 books
∴ Profit on each book = ₹ 20
$\Rightarrow 20 = 1.25x - x$
$\Rightarrow 20 = 0.25x$

$$\Rightarrow x = \frac{20}{0.25} = 80$$

So, both statements are required.

154. (d) The question cannot be answered by either of the statement

155. (b) Let the wholesale price be ₹ x.
Then, MP = ₹ $1.2x$

$$\text{If MP} = \frac{90}{100}1.2x, \text{ then profit} = ₹\ 10$$

$$\Rightarrow \frac{90}{100}\times 1.2x - x = 10$$

$\Rightarrow 0.08x = 10$

$\Rightarrow x = \frac{10}{0.08} = ₹\ 125$

So, Statement I alone is required to give the answer.

156. (b) I. Students passed in both subjects
$= (90 + 50) - (150 - 30) = 20$

157. (d) I. $a^2 - 4a + 4 = 0$
$\Rightarrow a^2 - 2a - 2a + 4 = 0$
$\Rightarrow a(a-2) - 2(a-2) = 0$
$\therefore a = 2, 2$
II. $b^2 - 6b + 9 = 16$
$\Rightarrow b^2 - 6b - 7 = 0$
$\Rightarrow b^2 - 7b + b - 7 = 0$
$\Rightarrow b(b-7) + 1(b-7) = 0$
$\therefore b = -1, 7$
Here, we cannot say that whether $a < b$ or $a > b$.
So, neither I nor II is sufficient to provide the answer.

158. (c) From Statements I and II,

End → Naresh
Shyam
Ram
Narender
Start → Ramesh

Ramesh > Narender > Ram > Shyam > Naresh
So, Ram is the third person in the queue.
Hence, both the statements are required.

159. (c) From Statement I,
Y > Z
From Statement II,
A > Y > X
Now, from Statements I and II,
A > Y > (X, Z)
It is clear that A got the maximum marks.
So, both statements are required.

160. (d) I. The two-digits numbers whose sum is 6, are 15, 51, 33, 42 and 24.
II.
Since, the difference of 2 digits is 2, so we have two numbers 24 and 42.
Here, we cannot determine the required value.
So, neither I nor II is sufficient to provide the answer.

161. (b) BIS is the world's oldest international financial organisation Raghuram Rajan was the first Indian central banker to appointed as vice-chairman of the BIS.

162. (c) The National League for Democracy (NLD) is a democratic socialist and liberal democratic political party in Myanmar. Nobel Laurate Aung San Suu Kyi is one of its founder. In 2015 General Election, NLD won majority seats.

163. (c) 'Qute' is Bajaj's four-wheeled QE60. It is India's 1st quadricycle.

164. (c) The Competition Commission of India (CCI) is a quasi-judicial body established to eliminate practices that adversely affect competition in different industries and protect interest of consumers and ensure freedom of trade.

165. (a) Special Drawing Rights (SDR) is an international monetary reserve currency, created by the International Monetary Fund (IMF) in 1969.

166. (c)

167. (d) Jonah Lomu was the youngest ever. He has been described as the 1st true global superstar of rugby union.

168. (b) Fauja Singh, the iconic 104 yr old marathon runner, also known as the 'Turbaned Tornado' was chosen as the ambassador and symbol of Nestle India's 100 yr and running compaign.

169. (a) In India's first telecom spectrum trading transaction, Videocon telecommunication, a subsidiary of Videocon industries, sold its spectrum in Gujarat and UP (West) circle of Aditya Birla group's Idea Cellular at a valuation of ₹ 3310 crore.

170. (d) Taiwan's Wistron, the world's no. 2 contract manufacturer, has formed a joint venture with Optiemus infracom to make smartphones, tablets and smart devices in India.

171. (c) Russian President Vladimir Putin lifted a ban on Russian firm from working on Iranian enrichment sites on November 2015.

172. (a) As part of Indian Prime Minister Modi's visit of Singapore, the 2-countries signed, Cyber Security' agreement to strengthen online security.

173. (c) For the 1st time in the history of cricket, a pink leather ball replaced the standard red ball.

174. (a) Li-Fi, uses Visible Light Communication (VLC) to send data at extremely high speeds. Aside from its superior speed, it also boost a number of other benefits over Wi-Fi. As the signal is carried by optical light, it cannot travel through walls, therefore enhancing the security of local networks.

175. (c) South Korea is the first country outside US to announce emissions scandal measures and punish Volkswagon, a German car manufacturer on the basis of its own emission test.

176. (d) Antonio Costa became the new Prime Minister of Portugal after a coalition government of left parties got majority.

177. (a) World Bank announced in November 2015 that 'Skill India' to be funded ₹ 6600 crore, with the activities ranging from buttressing skill training infrastructure in underserved areas to in formating Indian workers about employment opportunities abroad and facilitating their movement to foreign shores.

178. (c) HSBC Bank announce to close down India private banking business. The decision was taken after a review of the bank's global private banking business in India.

179. (b) Justice Tirath Singh Thakur became the 43rd Chief Justice of India in 2015.

180. (c) The meeting between National Security Advisors Ajit Doval and his Pakistani counterpart Nasir Khan took place in Bangkok in December 2015.

181. (a) Tata Group trusts will support US based not-for-profit Khan Academy to provide free online education to Indians through one of the biggest open-access online platforms.

182. (d) India beat Netherlands 3-2 in penalty Shootout to take bronze medal in Hero Hockey World League match held in Raipur.

183. (b) Bharti Enterprises launch 'Nyaya-Bharti' initiative to provide legal and financial assistance including awareness to under privileged under trials.

184. (a) Sunlife's Insurance earlier stake tn JV was 26%. It invested ₹1664 crore to increase its stake in Birla Sunlife Insurance from 26% to 49%.

185. (a) Mark Zuckerberg will put 99% of his Facebook inc share, currently worth $45 billion into a new philanthropy project, focusing on human potential and equality. He would sell or give upto $ 1 billion in shares in each of the next 3 years.

186. (b) Tata Sons, promoter of India's largest Industrial House Tata Group and Industrial and Commercial Bank of China (ICBC), the world's largest lender, has inked a deal where in the latter will be a strategic banking partner to the salt-to-software conglomerate.

187. (a) WHO unveiled Strawberry and Raspberry flavoured medicine customised for children to tight against pediatric Tuberculosis.

188. (d) Flipkart, India's largest e-commerce market place, has acquired a strategic minority stake in 'MapMyIndia', a leader in premium quality digital map data, GPS navigation tracking location based apps and GIS solution.

189. (a) India's best known Journalist, Barkha Dutt makes her debut as a writer with. The Unquiet Land: Stories from India's Fault Lines'.

190. (b) UN confers Shri Kiren Rijiju with Disaster Risk Reduction Asia Champion honour.

191. (c) Government of India opens AMRIT outlet at AIIMS for selling affordable drugs for Cancer and Heart diseases.

192. (a) International Children's Film Festival of India (ICFFI) is also popularly known as the Golden Elephant. It is a biennial festival in India.

193. (b) The 2nd High Global Level Conference on Traffic Safety, was hosted by the Government of Brazil and supported by WHO will be a milestone for road safety.

194. (a) Indian Railway issues the Letter of Award (LoA) for setting up Electric Locomotive Factory (ELF) at Madhepura in Bihar to a France based company, M/S Alstom Manufacturing India Limited.

195. (c)

196. (d) Sun Edition, a US renewable energy major, has won the 500 Megawatt Project. The company will put up the plant in an NTPC-developed Solen pank in Andhra Pradesh's Kurnool district.

197. (c) 2015 Davis Cup was 104th Edition of Davis Cup. It is a tournament between national team in men's tennis. Britain won their 10th title after defeating Belgium.

198. (d) As per the GFMS Gold Survey, India regained its top position from China as the biggest overall consumer of gold in the 1st 9-months of 2015 with a total consumption of 642 tonnes.

199. (a) The Hero World Challenge is a Golf Tournament hosted by Tiger Woods Foundation in December 2015. Title was won by Bubba Watson of USA.

200. (d) Sanjiv Goenka's New Rising bugged the new IPL franchise chennai for Pune for the next two years.