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MAT 2018 Question Paper

Management Aptitude Test conducted by AIMA

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MANAGEMENT APTITUDE TEST (MAT)

Held on : May 2018

Time : 2.5 hrs

(BASED ON MEMORY)

Maximum Marks : 200

SECTION-A : English Language

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

- Loquacious
(a) Talkative (b) Slow
(c) Content (d) Unclear
- Vindictive
(a) Imaginative (b) Accusative
(c) Spiteful (d) Aggressive
- Inclement
(a) Selfish (b) Active
(c) Unfavourable (d) Inactives

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

- Florid
(a) Weak (b) Pale
(c) Monotonous (d) Ugly
- Verity
(a) Sanctity (b) Reverence
(c) Falsehood (d) Rarity
- Perspicuity
(a) Vagueness (b) Dullness
(c) Unfairness (d) Unwillingness

DIRECTIONS (Qs. 7-9) : In the question given below some of the part has been highlighted. You have to find the part which is not highlighted and is both grammatically and contextually correct. Ensure that the meaning of the statement remains unchanged.

- While there is no quibble about the need to **deny unscrupulous and wilful defaulters** who has put banks and other creditors in substantial financial hardship the opportunity to regain control of corporate assets that have been put under resolution, the category of people barred is too broad and risks the very objectives of the original code.
(a) While there is no quibble about the need
(b) who has put banks and other creditors in
(c) of corporate assets that have been put under resolution
(d) the category of people barred is too broad and risks the very objectives of the original code.
- Our constant usage of the Internet threatens our reading capacity. **It results in our decreasing capacity to concentrate**, think and understand things as we were used to. **And while the decision-making part of our brain works** in overdrive by clicking, skimming, browsing, liking,

sharing, bookmarking, it is true that we are choosing faster, but we are not understanding in depth what we chose and why we chose what we did.

- (a) Our constant usage of the Internet threatens our reading capacity
(b) think and understand things as we were used to
(c) in overdrive by clicking, skimming, browsing, liking, sharing, bookmarking, it is true that we are choosing faster
(d) No Error
- Any interruption**, by indulging in a conflict with nations small or big, would not only damage but **derail the levels** of progress that is essential to achieve this objective.
(a) by indulging in a conflict with nations small or big
(b) would not only damage but
(c) progress that is essential
(d) to achieve this objective

DIRECTIONS (Qs. 10-14) : Read the following passage carefully and answer the questions given below it.

When times are hard, doomsayers are aplenty. The problem is that if you listen to them too carefully, you tend to overlook the most obvious signs of change. 2011 was a bad year. Can 2012 be any worse? Doomsday forecasts are the easiest to make these days. So let's try a contrarian's forecast instead.

Let's start with the global economy. We have seen a steady flow of good news from the US. The employment situation seems to be improving rapidly and consumer sentiment, reflected in retail expenditures on discretionary items like electronics and clothes, has picked up. If these trends sustain, the US might post better growth numbers for 2012 than the 1.5-1.8 percent being forecast currently.

Japan is likely to pull out of a recession in 2012 as post-earthquake reconstruction efforts gather momentum and the fiscal stimulus announced in 2011 begins to pay off. The consensus estimate for growth in Japan is a respectable 2 per cent for 2012.

The "hard-landing" scenario for China remains and will remain a myth. Growth might decelerate further from the 9 per cent that it expected to clock in 2011 but is unlikely to drop below 8-8.5 percent in 2012.

Europe is certainly in a spot of trouble. It is perhaps already in recession and for 2012 it is likely to post mildly negative growth. The risk of implosion has dwindled over the last few months - peripheral economies like Greece, Italy and Spain have new governments in place and have made progress towards genuine economic reform.

Even with some of these positive factors in place, we have to accept the fact that global growth in 2012 will be tepid. But there

is a flipside to this. Softer growth means lower demand for commodities and this is likely to drive a correction in commodity prices. Lower commodity inflation will enable emerging market central banks to reverse their monetary stance. China, for instance, has already reversed its stance and has pared its reserve ratio twice. The RBI also seems poised for a reversal in its rate cycle as headline inflation seems well on its way to its target of 7 per cent for March 2012.

That said, oil might be an exception to the general trend in commodities. Rising geopolitical tensions, particularly the continuing face-off between Iran and the US, might lead to a spurt in prices. It might make sense for our oil companies to hedge this risk instead of buying oil in the spot market.

As inflation fears abate and emerging market central banks begin to cut rates, two things could happen. Lower commodity inflation would mean lower interest rates and better credit availability. This could set a floor to growth and slowly reverse the business cycle within these economies. Second, as the fear of untamed, runaway inflation in these economies abates, the global investor's comfort levels with their markets will increase.

Which of the emerging markets will outperform and who will get left behind? In an environment in which global growth is likely to be weak, economies like India that have a powerful domestic consumption dynamic should lead; those dependent on exports should, *prima facie*, fall behind. Specifically for India, a fall in the exchange rate could not have come at a better time. It will help Indian exporters gain market share even if global trade remains depressed. More importantly, it could lead to massive import substitution that favours domestic producers.

Let's now focus on India and start with a caveat. It is important not to confuse a short-run cyclical dip with a permanent de-rating of its long-term structural potential. The arithmetic is simple. Our growth rate can be in the range of 7-10 per cent depending on policy action. Ten per cent if we get everything right, 7 per cent if we get it all wrong. Which policies and reforms are critical to taking us to our 10 per cent potential? In judging this, let's again be careful. Let's not go by the laundry list of reforms that FIIs like to wave: increase in foreign equity limits in foreign shareholding, greater voting rights for institutional shareholders in banks, FDI in retail, etc. These can have an impact only at the margin. We need not bend over backwards to appease the FIIs through these reforms - they will invest in our markets when momentum picks up and will be the first to exit when the momentum flags, reforms or not.

The reforms that we need are the ones that can actually raise out. Sustainable long-term growth rate. These have to come in areas like better targeting of subsidies, making projects in infrastructure viable so that they draw capital, raising the productivity of agriculture, improving healthcare and education, bringing the parallel economy under the tax net, implementing fundamental reforms in taxation like GST and the direct tax code and finally easing the myriad rules and regulations that make doing business in India such a nightmare. A number of these things do not require new legislation and can be done through executive order.

10. Which of the following is NOT TRUE according to the passage ?
 - (a) China's economic growth may decline in the year 2012 as compared to the year 2011
 - (b) The European economy is not doing very well
 - (c) Greece is on the verge of bringing about economic reforms
 - (d) All are true
11. Which of the following will possibly be a result of softer growth estimated for the year 2012 ?
 - (A) Prices of oil will not increase.
 - (B) Credit availability would be lesser.
 - (C) Commodity inflation would be lesser.
 - (a) Only (B)
 - (b) Only (A) and (B)
 - (c) Only (A) and (C)
 - (d) Only (C)
12. According to the author, which of the following would characterize Indian growth scenario in 2012 ?
 - (A) Domestic producers will take a hit because of depressed global trade scenario.
 - (B) On account of its high domestic consumption, India will lead.
 - (C) Indian exporters will have a hard time in gaining market share.
 - (a) Only (B)
 - (b) Only (A) and (B)
 - (c) Only (B) and (C)
 - (d) Only (A)
13. Why does the author not recommend taking up the reforms suggested by FII's?
 - (a) These will bring about only minor growth
 - (b) The reforms suggested will have no effect on the economy of our country, whereas will benefit the FII's significantly
 - (c) The previous such recommendations had backfired
 - (d) These reforms will be the sole reason for our country's economic downfall
14. According to the author, which of the following reform/s is/ are needed to ensure long term growth in India?
 - (A) Improving healthcare and educational facilities.
 - (B) Bringing about reforms in taxation.
 - (C) Improving agricultural productivity.
 - (a) Only (B)
 - (b) Only (A) and (B)
 - (c) Only (B) and (C)
 - (d) All (A), (B) and (C)

DIRECTIONS (Qs. 15-19) : Read the following passage carefully and answer the questions given below it.

In India, innovation is emerging as one of the most important rubrics in the discourse on how to bring about greater and more consistent economic and social development. One observes steadily growing investments in R & D across the country, the setting up of national and state innovation bodies, as well as the introduction of government sponsored innovation funds. There have also been several conferences and debates on innovation and how to best promote and accomplish it in India, and a number of articles on the subject, written for newspapers and magazines, as well as more informal platforms like online forums and blogs.

Academic engagement and Indian authorship on the subject have also exploded in the last five years. Despite widespread agreement on the importance of innovation in India, there are wide gulfs between different conceptions of innovation and the path India should take towards securing benefits through investments in innovation.

Many Indian conversations around innovation begin by talking about *jugaad*, that uniquely Indian approach to a temporary fix when something complex, like an automobile or a steam engine stops working. However, many observers have pointed out that while *jugaad* is certainly innovative, it is a response to the lack of an innovation culture—more a survival or coping mechanism at a time of need than a systematic methodology to effectively address a wide-ranging, complex set of problems.

Another specifically Indian approach to innovation that has entered into wide currency of late is so-called 'frugal innovation' deemed by many to be the most appropriate for the Indian context. In its midterm assessment of the 11th five-year plan, the planning commission stressed the need for innovation in India in order to 'accelerate its growth and to make growth more inclusive as well as environmentally sustainable.' The document went on to say that 'India needs more frugal innovation that produces more frugal cost products and services that are affordable by people at low levels of incomes without compromising the safety, efficiency, and utility of the products. The country also needs processes of innovation that are frugal in the resources required to produce the innovations. The products and processes must also have frugal impact on the earth's resources.'

Two people formulated a similar theory called the More-from Less for More (MLM theory of innovation) theory of innovation, which advocates a focus on innovations that allow for more production using fewer resources but benefit more people. Under this rubric come products that are more affordable versions of existing technologies. While both frugal innovation and the MLM theory are certainly valuable in terms of bringing affordable products and services to a greater number of people, and may even be considered a necessary first step on India's innovation path, they barely graze the surface of what innovation can accomplish. That is, innovation is capable of bringing about complete paradigm shifts and redefining the way we perceive and interact with the world.

Take the cell phone, for example : it revolutionized communication in a previously inconceivable way, provided consumers with a product of unprecedented value and created an entirely new market. The cell phone was a result of years of directed, international innovation efforts and large investments, and would not have ever been created if the people responsible simply set out to make the existing telephone cheaper and more accessible to all.

While *jugaad* and frugal innovation may be indicative of the Indian potential for innovativeness, this potential is not utilised or given opportunity to flourish due to the lack of an enabling culture.

India's many diverse and complex needs can be met only through systematic innovation, and major shifts have to first take place—in our educational institutions, government policies and commercial firms in order for such an innovation enabling culture to come about.

The one thing that India's innovation theorists have not said is that the absence of a culture of innovation is intrinsically linked to many of the most intractable problems facing India as a nation. These include poor delivery of government services, inadequate systems of personal identification and the absence of widely available financial services for rural poor, health and sanitation failures. This list can go on. Cumulatively, the inability of India as a nation, society and economy to adequately provide for its own population no longer reflects a failure of implementation, but rather of a failure of innovation, for there are not immediately—available off the shelf solutions that would make it possible for these grand challenges facing India to be redressed. Rather, we need to look at these intractable problems from the more sophisticated and empowering lens of innovation, for them to be solved.

15. Which of the following depict/s the growing importance of innovation in India?
 - (A) Increased investment in research.
 - (B) Initiation of Government backed funds for innovation.
 - (C) Increase in number of conferences arranged and articles written on innovation.
 - (a) Only (B)
 - (b) Only (A) and (B)
 - (c) Only (C)
 - (d) All (A), (B) and (C)
16. Which of the following best describes the MLM theory of innovation?
 - (a) Maximise output by using least number of resources and benefiting a small number of people.
 - (b) Maximise resource utilisation and cost there by benefit maximum number of people.
 - (c) Minimise output and resource utilisation. Yet benefit the maximum number of people.
 - (d) Benefit most number of people through least usage of resources and maximum output.
17. Why, according to the author, is India unable to adequately provide for its people?
 - (a) Failure to implement schemes and initiatives meant for the Indian populace
 - (b) Absence of regulatory authorities to oversee the implementation process.
 - (c) Failure to innovate in order to find solutions.
 - (d) Lack of governmental schemes and initiatives to redress the challenges faced by India.
18. Why, according to some people, is *Jugaad* not the answer to India's problems?
 - (a) Many a times this methodology backfires leading to further complications.
 - (b) '*Jugaad*' provides only cheap solutions to all problems.
 - (c) It is reactive and not a proactive and organised method of finding solutions to problems
 - (d) It can provide solutions to only simple problems and not complex ones.

19. Which of the following is/are true about the cell phone ?
- (A) The innovation of the cell phone required investment of huge capital.
- (B) The cell phone, when invented was meant to be affordable to all.
- (C) The cell phone was made available to the public in a very short time from its ideation.
- (a) Only (A) (b) Only (A) and (B)
- (c) Only (B) and (C) (d) Only (B)

DIRECTIONS (Qs. 20-24) : Read the following interview and answer the given questions based on.

A pioneering new book, *Gender and Green Governance*, explores a central question: If women had adequate representation in forestry institutions, would it make a difference to them, their communities, and forests as a national resource? Interview with the author.

Why has access to forests been such a conflict-ridden issue?

This is not surprising. Forests constitute not just community and national wealth, but global wealth. But for millions, forests are also critical for livelihoods and their daily lives.

Your first book, *Cold Hearts and Barren Slopes (1886)*, was about forests. Is there an evolution of argument here?

Yes indeed : In *Cold Hearts and Barren Slopes*, I had argued that social forestry, with its top-down implementation and focus on commercial species, was neither 'social' nor 'forestry', and would protect neither forests nor village livelihoods. The answer, I argued, lay in allowing forests communities to manage local forests. Finally, in 1890, India launched the joint forest management programme and Nepal also started the community forestry. So I decided to see for myself how community forestry was actually doing.

Between 1895 and 1899, I travelled extensively across India and Nepal and found paradox : Forests were indeed becoming greener but women's problem of firewood shortages persisted and in many cases had become more acute. Also, despite their high stakes in forests, women continued to be largely excluded from forest management. I coined the term "participatory exclusions" to describe this. However, the current book is less about women's exclusion. I ask : What if women were present in forest governance ? What difference would that make ?

But has this question not been raised before ?

Economists researching environmental collective action have paid little attention to gender. Scholars from other disciplines focussing on gender and governance have been concerned mainly with women's near absence from governance institutions. The presumption is that once women are present all good things will follow. But can we assume this ? No. Rural women's relationship with forests is complex.

On the one hand, their everyday dependence on forests for fire-wood, fodder, etc, creates a strong stake in conservation. On the other, the same dependence can compel them to extract heavily from forests. As one landless woman told me : 'Of course, it hurts me to cut a green branch but what do I do if my children are hungry? Taking an agnostic position, I decided to test varied propositions, controlling for other factors.

What did you find ?

First, women's greater presence enhances their effective voice in decision-making. And there is a critical mass effect : If forests management groups have 25-33 per cent female members in their executive committees it significantly increases the likelihood of women attending meetings, speaking up and holding office. However, the inclusion of landless women makes a particular difference. When present in sufficient numbers they are more likely to attend meetings and voice their concerns than landed women. So what matters is not just including more women, but more poor women.

Second, and unexpectedly, groups with more women typically make stricter forest use rules. Why is this the case ? Mainly because they receive poorer forests from the forest department. To regenerate these they have to sacrifice their immediate needs. Women from households with some land have some fallback. But remarkably even in groups with more landless women, although extraction is higher, they still balance self-interest with conservation goals, when placed in decision-making positions.

Third, groups with more women outperform other groups in improving forest conditions, despite getting poorer forests. Involving women substantially improves protection and conflict resolution, helps the use of their knowledge of local biodiversity, and raises children's awareness about conservation.

20. Which of the following is one of the reasons of forests being a conflict-ridden issue?
- (a) Some countries have larger forest cover
- (b) There is less awareness about global warming
- (c) High dependence of many on forests
- (d) Less representation of women
21. The author is advocating inclusion of
- (a) More landless women
- (b) More landed women
- (c) More women irrespective of their financial status
- (d) Local people
22. Which of the following best describes "participatory exclusion", as used in the interview?
- (a) Outside support
- (b) Overdependence
- (c) Benefiting without self interest
- (d) None of these
23. In the second question, the interviewer asked - 'Is there an evolution of argument here ?' Which of the following best describes that?
- (a) From Barren to Greener slopes
- (b) From local groups to local groups with more women
- (c) A fine balance between conservation and commercial forestry
- (d) Top-down approach to Community forestry
24. Why does author say, 'Rural women's relationship with forests is complex'?
- (a) Dependence forces them to extract and also have concern for conservation
- (b) If they protect forests, their livelihood is severely affected
- (c) Poor women have been excluded from forest management
- (d) They cannot be asked to restore forests which are critical for them

DIRECTIONS (Qs. 25-29): Read the following passage carefully and answer the questions given below it. Certain words / phrases have been printed in bold to help you locate them while answering some of the questions.

Crude oil has had a long history, and an interesting one. It is probably one single natural resource that has been **instrumental** in producing maximum conflicts and wars during the last century. With such a track record, it is surprising that in the given environment, wherein oil prices are breaking all records, and has become the biggest cause of concern across the globe, why is it that there is silence from some parts of the world? It is intriguing especially when some have been paying a much higher price on fuel, as compared to their poorer counterparts. It is surprising, more so, when one realizes that the number of oil producing nations is only a handful and compared to the number of oil consuming nations. While a proactive action from the mighty and powerful can bring in a huge respite for the world, why is it that they choose to be silent? Also, keeping in mind the fact that a few nations - both powerful and weak have some of the largest unused oil reserves, their silence 'and lack of any serious action look at the more aberrant. Looking at 'the manner things are shaping up, it just cannot be ruled out that possibly **these nations have a definite interest in the increasing prices of oil**. The question then is what could their underlying interest be ?

In all probability, what we are seeing right now is just a precursor to the larger picture, well laid out by them may be for the good. With rising prices, the OPEC might be delighted right now, but perhaps they are unable to see what is going to hit them. For this unprecedented rise in oil is creating a most demanding environment for alternative fuels. As and when the reserves deplete and demand really grows, more than anyone else, it is OPEC that would be badly hit, much to the glee of some nations having unused reserves which have the most to gain by using blackmailing tactics. Eventually, the countries at the receiving end would be forced to create an enabling environment for alternative energy. This trend is already visible, with India showing the way with its nuclear deal and other countries dangling the carrot of complete conversion of natural gas towards other countries in order to boost their own business. By doing so they are creating a tactical pressure on countries. As they know that the further the oil prices get pushed, the more the globe would become attracted and ready for alternative and non-conventional fuel. Moreover, for many of the countries, it might become more expensive to invest in newer technologies to conform to the emission norms than to shift to alternative sources, making the market even more attractive. And it is then that the organisations which have already invested billions of dollars in alternate fuels would mop up the global energy market completely.

The second possible reason why some nations of the world are not too enthusiastic to mitigate the price of oil is because the rising oil price is perhaps one of the major deterrents to growth of other countries. Perhaps they were hand in glove in the mechanism to raise the oil price and knowing well that this would make these nations feel the pinch. And now, the rising oil prices have put these nations in a fix. As the pressure of inflationary tendencies

increases these countries cannot afford either to sit back and remain entrapped in the larger conspiracy. No wonder then that these are frantically looking around the globe - especially Africa - for newer reserves ! As it is said, oil has a long history and the legacy continues.

25. Which nations does the author refer to the phrase '**these nations have a definite interest in the increasing prices of oil**' ?
- The mighty and powerful nations
 - Nations having unused oil reserves
 - Nations which have exhausted their oil reserves
 - The nations which have shifted to non-conventional fuels
26. Which of the following is **not true** in context of the passage?
- Some nations have kept a silence upon the rising oil price in order to inhibit the growth of other nations
 - It is more cost effective to shift to alternate forms of energy than to invest in technology for conforming to the emission norms
 - Some nations have unused oil reserves which would earn these nations heavy profits once the oil reserves elsewhere deplete
 - All are true
27. What does the author mean by '**dangling the carrot**' in the passage?
- Some countries are stringently opposing the conversion to alternate forms of fuel
 - Some countries have been luring other countries to change over the alternate fuels in order to boost their own business
 - Some countries are making the effort to save environment by using natural gas instead of oil as a fuel
 - Both (a) and (b)
28. Why, according to the author, OPEC though delighted currently, would be in a difficult situation later ?
- All the oil reserves on the earth will soon be exhausted
 - Powerful nations will try and dominate OPEC later on
 - As the oil reserves which are being used currently deplete in the time to come, nations having unused oil reserves would arm-twist OPEC
 - None of these
29. What, according to the author, makes the market of alternate sources very attractive?
- Many countries have already made a substantial profit in the industry alternate fuel
 - Such measures do not cause harm to the environment
 - Only a few countries of the world will have to access to alternate forms of fuel
 - None of these

DIRECTIONS (Qs. 30-32): There are six sentences marked S_1 , S_2 , S_3 , P , Q , R , S . The positions of S_1 and S_6 are fixed as the first and last sentence of the passage. You are required to choose one of the five alternatives given below every passage which would be most logical sequence of the sentences in the passage.

30. S₁ : There are numerous kinds of superstitions in different parts of the country.
 S₆ : A dog's howling predicts death— this is a typical superstition.
 P : But people go on respecting it through force of blind custom.
 Q : Most of them have a bearing on 'luck'—good or bad.
 R : Superstitions usually have their origin in fear and ignorance.
 S : Nobody remembers now how a superstition first started in remote ages.

The proper sequence should be

- (a) QPRS (b) RSPQ
 (c) RSQP (d) QSPR

31. S₁ : A spider's web, after a shower of rain, is a very beautiful thing.
 S₆ : They are also feared because their bites may have unpleasant effects like a rash on the skin.
 P : This party explains why spiders are thoroughly disliked.
 Q : But no poet has ever sung of the beauty of the spiders, for most spiders are not beautiful.
 R : On the contrary, most of them are rather unattractive, if not ugly!
 S : Poets have sung about the beauty of the spider's webs, comparing the water drops on them to ropes of pearls.

The proper sequence should be

- (a) SPQR (b) QSRP
 (c) QRSP (d) SQRP

32. S₁ : Unhappiness and discontent spring not from poverty alone.
 S₆ : We suffer from sickness of spirit and hence we should discover our roots in the internal.
 P : Man is a strange creature fundamentally different from other animals.
 Q : If they are undeveloped and unsatisfied, he may have all the comforts of wealth, but still feel that life is not worthwhile.
 R : He has far horizons invariable hopes, spiritual powers.
 S : What is missing in our age is the soul, there is nothing wrong with the body.

The proper sequence should be

- (a) PRQS (b) SPRQ
 (c) SPQR (d) PRSQ

DIRECTIONS (Qs. 33-35) : In each of the questions given below, an incomplete sentence which must be filled/completed with one of the sentences given below. Choose the correct option and complete the given sentences.

33. The body was taken into custody and police stations of nearby districts her identity
 (a) were commanded to reveal
 (b) were commanded to conceal
 (c) were forced to hide
 (d) were ordered to trace

34. We need data so that various government schemes for different categories smoothly.
 (a) can be implemented
 (b) can be debarred
 (c) can be executed
 (d) can be resolved
35. A question on the form asks whether parents of the applicant occupation
 (a) are involved in a disguised
 (b) are indulged in the illegal
 (c) are engaged in a clean
 (d) are engaged in an unclean

DIRECTIONS (Qs. 36-37) : In the following questions, out of the four alternatives, choose the one which can be substituted for the given words/sentence.

36. An underhand device resorted to in order to justify misconduct
 (a) Subterfuge (b) Manoeuvre
 (c) Stratagem (d) Complicity
37. One who criticises popular beliefs which he thinks is mistaken or unwise
 (a) Philistine (b) Iconoclast
 (c) Imposter (d) Cannibal

DIRECTIONS (Qs. 38 - 40) : In the following questions, four alternatives are given for the Idiom/Phrase bolded in the sentence. Choose the alternative which best expresses the meaning of the Idiom/Phrase.

38. I could have continued my higher studies if I wanted but, that's **water under the bridge**.
 (a) something I cannot change
 (b) the time I met with an accident near the bridge
 (c) something my family did not want
 (d) the time I went on a cruise
39. My parents want me to study science, but I will **stick to my guns** and graduate in Economics.
 (a) prefer to disobey them
 (b) hold on to my decision
 (c) refuse to listen to them
 (d) show them that they are wrong
40. The manager dismissed the proposal **out of hand** and said that it was not at all practical.
 (a) completely (b) directly
 (c) simply (d) quickly

SECTION-B : Intelligence & Critical Reasoning

41. In a vertical row 13 persons are sitting. A is seventh from the beginning and two persons sit between G and A. Persons between A and L is same as persons between G and Q. Then what is the position of Q from the beginning?
 (a) Fourth (b) Eight
 (c) Sixth (d) Can't be determined
42. What should come in place of question mark (?) in the following series based on the above arrangement?
 ZB XD UG QK?

- (a) LK (b) LO
(c) LP (d) KP
43. What should come in place of question mark (?) in the following series based on the above arrangement?
BED EIG HMJ KQM ?
- (a) PUN (b) OUQ
(c) NUQ (d) NUP

DIRECTIONS (Qs. 44-45) : Study following statements and answer the questions:

Seven students Priya, Ankit, Raman, Sunil, Tony, Deepak and Vicky take a series of tests. No two students get similar marks. Vicky always scores more than Priya. Priya always scores more than Ankit. Each time either Raman scores the highest and Tony gets the least, or alternatively Sunil scores the highest and Deepak or Ankit scores the least.

44. If Sunil is ranked sixth and Ankit is ranked fifth, which of the following can be true?
- (a) Vicky is ranked first or fourth
(b) Raman is ranked second or third
(c) Tony is ranked fourth or fifth
(d) Deepak is ranked third or fourth
45. If Raman gets the highest, Vicky should be ranked not lower than:
- (a) Second (b) Third
(c) Fourth (d) Fifth

DIRECTIONS (Qs. 46-51) : These questions are based on the following :

During one week, a human resource director conducts five interviews for a new job, one interview per day, Monday through Friday. There are six candidates for the job- Ram, Shyam, Trilochan, Usha, Veena, and Kishore. No more than two candidates are interviewed more than once. Neither Shyam nor Usha nor Veena is interviewed more than once, and no other candidate is interviewed more than twice. The schedule of interviews is subject to the following conditions :

- If Trilochan is interviewed, then Trilochan must be interviewed on both Monday and Friday.
 - If Shyam is interviewed, then Usha is also interviewed, with Shyam's interview taking place earlier than Usha's interview.
 - If Ram is interviewed twice, then Ram's second interview takes place exactly two days after Ram's first interview.
 - If Veena's is interviewed, then Kishore is interviewed twice, with Veena's interview taking place after Kishore's first interview and before Kishore's second interview.
 - If Usha is interviewed then Ram is also interviewed, with Usha's interview taking place on a day either immediately before or immediately after a day on which Ram is interviewed.
46. Which of the following could be a complete and accurate list of candidates the human resources director interviews and the days on which those interviews take place ?
- (a) Monday : Shyam; Tuesday : Usha; Wednesday : Ram; Thursday : Kishore; Friday : Ram;
(b) Monday : Shyam; Tuesday : Kishore; Wednesday : Ram; Thursday : Kishore; Friday : Usha

- (c) Monday : Trilochan; Tuesday : Ram; Wednesday : Shyam; Thursday : Ram; Friday : Trilochan;
(d) Monday : Trilochan; Tuesday : Ram; Wednesday : Kishore; Thursday : Veena; Friday : Trilochan;
47. If Veena is interviewed on Tuesday, then which one of the following must be true ?
- (a) Trilochan is interviewed on Friday
(b) Usha is interviewed on Thursday
(c) Ram is not interviewed
(d) Shyam is not interviewed.
48. If Kishore is not interviewed, then which one of the following must be true ?
- (a) Ram is interviewed on Thursday
(b) Shyam is interviewed on Tuesday
(c) Trilochan is interviewed on Monday
(d) Usha is interviewed on Wednesday.
49. If Shyam is interviewed, then which one of the following could be true ?
- (a) Kishore is interviewed on both Tuesday and Wednesday
(b) Usha is interviewed on Monday
(c) Veena is interviewed on Tuesday
(d) Shyam is interviewed on Thursday
50. If neither Usha nor Trilochan is interviewed, then each of the following must be true except :
- (a) Ram is interviewed on Monday.
(b) Ram is interviewed on Thursday
(c) Veena is interviewed on Tuesday
(d) Kishore is interviewed on Wednesday
51. If both Usha and Veena are interviewed, then which one of the following is a complete and accurate list of the days on which Kishore could be interviewed ?
- (a) Monday, Friday
(b) Tuesday, Thursday
(c) Monday, Wednesday, Friday
(d) Tuesday, Wednesday, Thursday

DIRECTIONS (Qs. 52-55) : These questions are based on the following :

Seven persons A, B, C, D, E, F and G contested in a game show that had total prize money of ₹ 14 lakhs. Every contestant won some prize money and the highest prize money was ₹ 3.5 lakhs. No two contestant won the same amount of prize money. For every contestant the difference with the next highest and the next lowest winner is the same.

- E won ₹ 2 lakhs
 - B won more money than A
 - The difference of prize money between B and A was the minimum.
 - The difference of prize money between D and F was not the least.
 - There was at least one person whose prize money was between that of E and G
52. Which of the following is a proper list of persons in increasing order of prize money won ?
- (a) G, C, F, B, E, D, A (b) D, F, C, E, A, B, G
(c) F, C, D, E, A, B, G (d) A, B, G, C, F, E, D

53. If D won more than E, and B and G together won ₹ 3.5 lakhs, which of the following must be true?
 (a) D won ₹ 3.5 lakhs (b) A won ₹ 1.5 lakhs
 (c) B won ₹ 1.5 lakhs (d) C won ₹ 50,000
54. If the difference of prize money between A and C is the minimum, which of the following pairs must not have won prize money that differs by the minimal amount?
 (a) B and E (b) C and G
 (c) D and G (d) A and E
55. If the total money won by A and D is equal to that of G, and the difference between E and D is at least 1 lakh, then which of the following must be true?
 (a) A and B together won Rs. 3 lakh
 (b) B and F together won Rs. 3.5 lakh
 (c) C and E together won Rs. 3 lakh
 (d) B and C together won Rs. 3.5 lakh

DIRECTIONS (Qs. 56- 59): Study the following information carefully and answer the given questions.

P, Q, R, S, T, V, W and X are captains of eight different cricket teams, namely Australia, New Zealand, India, Pakistan, Sri Lanka, England, West Indies and South Africa, but not necessarily in the same order. All of them are seated around a circular table and are facing the centre.

P sits third to the left of the Sri Lankan captain. Only two people sit between T and W. Neither T nor W is an immediate neighbour of P. Neither T and W is the captain of Sri Lanka. The captain of South Africa sits second to the right of S. S is not an immediate neighbour of P. S is not the Sri Lankan captain and P is not the captain of South Africa. The Australian captain sits third to the left of V. The Australian and Sri Lankan captains are not immediate neighbours. Only one person sits between S and the Indian captain. Captains of Pakistan and New Zealand are immediate neighbours. S is not the captain of New Zealand's team. Only one person sits between Q and the captain of England. The captain of England is an immediate neighbour of X. W and Q are not immediate neighbours.

56. How many people sit between T and the captain of England when counted in clockwise direction from T?
 (a) None (b) One
 (c) Two (d) Four
57. Who is the captain of the Australian team?
 (a) P (b) V
 (c) W (d) T
58. Which of the following would come in place of question mark based upon the given seating arrangement?
 VS XR TV RP ?
 (a) SW (b) WX
 (c) QW (d) QX
59. Which of the following is true with respect to the given arrangement?
 (a) R is the captain of South Africa
 (b) W is an immediate neighbour of V.
 (c) The captain of Australia and England are immediate neighbours.
 (d) Four people sit between W and Q.

DIRECTIONS (Qs. 60 - 63) : On the basis of the information provided, answer the questions below.

A, B, C, E, F, G and H are 7 employees in an organisation working in different departments of Administration, Finance and Logistics. There are atleast two employees in each department. Out of these 7, 3 are females and one is in each department. Each employee gets a different salary. F works in Administration and his only other colleague G earns the maximum. C, the least earner works in Finance. B and E are brothers and are not in the same department. A, husband of H, works in Finance and earns more than F, B and E. The wife in the couple earns more than the husband.

60. In which of the departments, does a group of 3 work?
 (a) Logistics
 (b) Logistics or Administration
 (c) Administration or Finance
 (d) Finance
61. Which of the following statement is true?
 (a) B earns less than A and H
 (b) B earns less than F and H
 (c) F earns more than B and E
 (d) B earns more than E and C
62. In descending order of income, H is at which position?
 (a) 2 (b) 3
 (c) 5 (d) 1
63. If every alternative letter of English Alphabet from B onwards (including B) is written in lower case (small letters) and the remaining letters are capitalized, then: How will be the first month of the second half of the year be written?
 (a) AuGuSt (b) JuLy
 (c) jUly (d) AugUSt
64. A rich merchant had collected many gold coins. He did not want anybody to know about them. One day, his wife asked, "How many gold coins do we have?" After pausing a moment, he replied, "Well! If I divide the coins into two unequal numbers, then 48 times the difference between the two numbers equals the difference between the squares of the two numbers." The wife looked puzzled. Can you help the merchant's wife by finding out how many gold coins the merchant has?
 (a) 96 (b) 53
 (c) 43 (d) None of these

DIRECTIONS (Qs. 65-68) : Study the following information to answer the given questions.

A researcher is experimenting with varying arrangements of exactly six units that are electrical conductors – G, J, K, M, P and S in a loop containing eight positions, each capable of containing one conductor. In each arrangement, each conductor is at one of the eight positions and two positions are empty. In devising arrangements, the researcher must obey the following restrictions: G must be directly adjacent to J.

P must be directly adjacent to S.

M must be directly adjacent to S on one side and to an empty position on the other .

A signal can be transferred from one conductor directly to another, when the two conductors are directly adjacent to each other. A

signal can be transferred either way around the loop, from one conductor to another, until it reaches an empty position. A signal cannot be transferred across an empty position.

65. If a signal can be transferred, either directly or indirectly, from J to K , it must be true that a signal can be transferred, either directly or indirectly, from :
- (a) G to K (b) G to M
(c) J to P (d) J to M
66. If K is directly adjacent to P , any of the following could be true except:
- (a) G is directly adjacent to K
(b) J is directly adjacent to K
(c) J is directly adjacent to P
(d) G is directly adjacent to an empty position
67. If P is directly adjacent to an empty position, which of the following is the greatest number of conductors, including starting and ending conductors, that can be used in the transfer of a single signal ?
- (a) Two (b) Three
(c) Four (d) Five
68. If a signal can be transferred from G to S , any of the following conductors could be directly adjacent to an empty position except:
- (a) G (b) J
(c) K (d) P

DIRECTIONS (Qs. 69-72): In each question below is given a statement followed by two assumptions numbered I and II. An assumption is something supposed or taken for granted. You have to consider the statement and following assumptions and decide which the assumption is implicit in the statement. Give answer

- (a) if only assumption I is implicit;
(b) if only assumption II is implicit;
(c) if only both I and II are implicit.
(d) if only neither I nor II is implicit;
69. **Statement:** "Anybody found in use of unfair means will be debarred from all further examinations conducted by the board" – an ultimatum to the examinees by the examining body.

Assumptions:

- I Henceforth the students may refrain from using unfair means during examination.
II A good number of students are found involved in use of unfair means.
70. **Statement:** "Visit our showroom for quality products", – an advertisement by a garment factory.

Assumptions:

- I Majority of the people are interested in buying only good quality garments.
II The word "quality product" may attract the customers.
71. **Statement:** "All children upto the age of 12 years should be brought to the Civic Health Care Centres in the city once in a month for free checkup" – an appeal from Civic Health Care Department in the city.

Assumptions:

- I Public largely prefer the Health Care Centres run by civic authorities to the privately run Health Care Centres.
II Children upto the age of 12 years are susceptible to suffer from various disease.
72. **Statement:** "There should be a common examination board for the entire country conducting HSC examinations" – the opinion expressed by a group of parents and students.

Assumptions:

- I Various examination boards may be varying evaluation standards across the States.
II Students passing through the stricture boards may be at a disadvantage at the time of taking admission to professional colleges based on performance in HSC examinations.

DIRECTIONS (Q. 73-76): In each of these questions, a statement is followed by two courses of action numbered I and II. Assume everything in the statement to be true, and decide which of the suggested course(s) of action logically follow(s) for pursuing. Mark answer as :

- (a) If only I follows
(b) If either I or II follows
(c) If only II follows
(d) If neither I nor II follows
73. **Statement :** There has been significant drop in the water level of all the lakes supplying water to the city.
Courses of action :
I The water supply authority should impose a partial cut in supply to tackle the situation.
II. The government should appeal to all the residents through mass media for minimum use of water.
74. **Statement :** A large number of people visiting India from country 'X' has been tested positive for carrying viruses of a killer disease.
Courses of action :
I The Government of India should immediately put a complete ban on people coming to India from country 'X' including those Indians who are settled in country 'X'.
II. The Government of India should immediately set-up detection centres at all its airports and seaports to identify and quarantine those who are tested positive.
75. **Statement :** The prices of foodgrains and vegetables have substantially increased due to prolonged strike call given by the truck owners association.
Courses of action :
I The government should immediately make alternative arrangement to ensure adequate supply of foodgrains and vegetables in the market.
II. The government should take steps to cancel the licences of all vehicles belonging to the association.
76. **Statement :** There have been an unprecedented increase in the number of requests for berths in most of the long distance trains during the current holiday season.

Courses of action :

- I. The railway authority should immediately increase the capacity in each of these trains by attaching additional coaches.
- II. The people seeking accommodation should be advised to make their travel plan after the holiday

DIRECTIONS (Qs. 77-80) : Given below are pairs of events 'A' and 'B'. You have to read both the events 'A' and 'B' and decide their nature of relationship. You have to assume that the information given in 'A' and 'B' is true and you will not assume anything beyond the given information in deciding the answer.

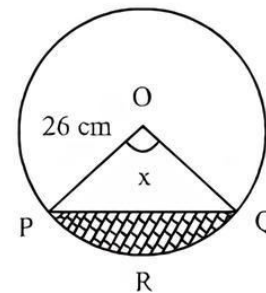
Mark answer :

- (a) If 'A' is the effect and 'B' is the immediate and principal cause.
 - (b) If 'A' is the immediate and principal cause and 'B' is its effect.
 - (c) If 'A' is an effect but 'B' is not its immediate and principal cause.
 - (d) If 'B' is an effect but 'A' is not its immediate and principal cause.
77. **Event (A) :** India is today gearing to become a leading producer and exporter of a range of minerals.
Event (B) : India is endowed with rich mineral resources.
78. **Event (A) :** Parliament passed Tobacco Control Bill last week.
Event (B) : Non-smokers no longer have to be victims of passive smoking.
79. **Event (A) :** The people of state X have claimed that vegetables like *parwal* and *kakora* are treated with malachite green to make them look fresh.
Event (B) : The officials of Food Adulteration Department has started collecting samples of vegetables from suspicious places in state X.
80. **Event (A) :** According to an NGO report, there are high levels of pesticides in Coca Cola, Pepsi, and other aerated drinks.
Event (B) : Members of Parliament have demanded for a ban on the supply of aerated drinks in the Parliament.

SECTION-C : Mathematical Skills

81. A bucket contains 200cc of liquid. A solid ball is dropped in the bucket resulting in the rise of liquid level to 1.3 times of its original level. If the radius of the base of the bucket is 3 cm and the radius of the surface of the liquid level is 1 cm more than the radius of the base of the bucket before the ball is dropped. Find the volume of the solid metal ball.
- (a) 68cc
 - (b) 80cc
 - (c) 92cc
 - (d) Can't be determined
82. In the triangle PQR, S is the midpoint of QR. X is any point on PR. T is the point on QR such that $PT \parallel SX$. If the area of triangle PQR is 5.8 sq. cm, then the area of triangle RTX is
- (a) 2.9 sq. cm
 - (b) 3.2 sq. cm

- (c) 5.8 sq. cm
 - (d) 2.45 sq. cm
83. Joseph diametrically crosses a semi-circular playground and takes 48 seconds less than if he crosses the playground along the semi-circular path. If he walks 50 metres in one minute, the diameter of playground is
- (a) 54 metres
 - (b) 70 metres
 - (c) 85 metres
 - (d) 35 metres
84. A metallic solid is made up of a solid cylindrical base with a solid cone on its top. The radius of the base of the cone is 5 cm, and the ratio of the height of the cylinder and the cone is 3:2. A cylindrical hole is drilled through the solid with height equal $\frac{2}{3}$ rd of the height of solid. What should be the radius (in cm) of the hole so that the volume of the hole is $\frac{1}{3}$ rd of the volume of the metallic solid after drilling?
- (a) $\sqrt{\frac{45}{8}}$
 - (b) $\sqrt{\frac{35}{8}}$
 - (c) $\sqrt{\frac{65}{8}}$
 - (d) $\sqrt{\frac{55}{8}}$
85. A chord PQ of length 48 cm is drawn in a circle of radius 26 cm. Find the area of the shaded portion PQR.



- (a) $26\pi x \text{ cm}^2$
 - (b) $\frac{26\pi x}{180} \text{ cm}^2$
 - (c) $\frac{676\pi x}{360} - 240 \text{ cm}^2$
 - (d) $\frac{676\pi x}{180} - 240 \text{ cm}^2$
86. A reputed paint company plans to award prizes to its top three salespersons, with the highest prize going to the top salesperson, the next highest prize to the next salesperson and a smaller prize to the third-ranking salesperson. If the company has 15 salespersons, how many different arrangements of winners are possible (Assume there are no ties)?
- (a) 1728
 - (b) 2730
 - (c) 3856
 - (d) 1320
87. In an MBA entrance examination, a minimum is to be secured in each of the 6 sections to qualify the cut-offs. In how many ways can a candidate qualify the cut-offs?
- (a) 60
 - (b) 61
 - (c) 62
 - (d) 63
88. The internal evaluation for Economics course in an Engineering programme is based on the score of four quizzes. Rahul has secured 70, 90 and 80 in the first three quizzes.

- The fourth quiz has ten True-False type questions, each carrying 10 marks. What is the probability that Rahul's average internal marks for the Economics course is more than 80, given that he decides to guess randomly on the final quiz?
- (a) $12/1024$ (b) $11/1024$
(c) $11/256$ (d) $12/256$
89. In 2004, Rohini was thrice as old as her brother Arvind. In 2014, Rohini was only six years older than her brother. In which year was Rohini born?
(a) 1984 (b) 1986
(c) 1995 (d) 2000
90. A tank is connected with both inlet pipes and outlet pipes. Individually, an inlet pipe can fill the tank in 7 hours and an outlet pipe can empty it in 5 hours. If all the pipes are kept open, it takes exactly 7 hours for a completely filled-in tank to empty. If the total number of pipes, connected to the tank is 11, how many of these are inlet pipes?
(a) 2 (b) 4
(c) 5 (d) 6
91. A firm is thinking of buying a printer for its office use for the next one year. The criterion for choosing is based on the least per-page printing cost. It can choose between an inkjet printer which costs ₹5000 and laser printer which costs ₹8000. The per-page printing cost for an inkjet is ₹1.80 and that for a laser printer is ₹1.50. The firm should purchase the laser printer, if the minimum number of pages to be printed in the year exceeds
(a) 5000 (b) 10000
(c) 15000 (d) 18000
92. Three carpenters P, Q and R are entrusted with office furniture work. P can do a job in 42 days, If Q is 26% more efficient than P and R is 50% more efficient than Q, then Q and R together can finish the job in approximately:
(a) 11 days (b) 13 days
(c) 15 days (d) 17 days
93. There are two alloys P and Q made up of silver, copper and aluminium. Alloy P contains 45% silver and rest aluminium. Alloy Q contains 30% silver, 35% copper and rest aluminium. Alloys P and Q are mixed in the ratio of 1:4.5. The approximate percentages of silver and copper in the newly formed alloy is:
(a) 33% and 29% (b) 29% and 26%
(c) 35% and 30% (d) None of the above
94. A right-angled triangle has a hypotenuse of 13 cm and one side as 12 cm. Its area is:
(a) 30 cm^2 (b) 39 cm^2
(c) 80 cm^2 (d) 78 cm^2
95. P, Q and R invested in a business in the ratio 6 : 8 : 9. If Q invested for a period whose numerical value is 112.5% of Q's investment but P and R invested for one year. If profit of Q at the end of the year is ₹ 6750 then what is the share of profit of R?
(a) ₹ 14135 (b) ₹ 10145
(c) ₹ 11350 (d) ₹ 10125
96. A milk vendor sells 10 litres of milk from a can containing 40 litres of pure milk to the 1st customer. He then adds 10 litres of water to the milk can. He again sells 10 litres of mixture to the 2nd customer and then adds 10 litres of water to the can. Again he sells 10 litres of mixture to the 3rd customer and then adds 10 litres of water to the can and so on. What amount of pure milk will the 5th customer receive?
(a) $\frac{510}{128}$ litres (b) $\frac{505}{128}$ litres
(c) $\frac{410}{128}$ litres (d) $\frac{405}{128}$ litres
97. A ferry carries passengers to Rock of Vivekananda and back from Kanyakumari. The distance of Rock of Vivekananda from Kanyakumari is 100 km. One day, the ferry started for Rock of Vivekananda with passengers on board, at a speed of 20 km per hour. After 90 minutes, the crew realized that there is a hole in the ferry and 15 gallons of sea water had already entered the ferry. Sea water is entering the ferry at the rate of 10 gallons per hour. It requires 60 gallons of water to sink the ferry. At what speed should the driver now drive the ferry so that it can reach the Rock of Vivekananda and return back to Kanyakumari just in time before the ferry sinks? (Current of the sea water from Rock of Vivekananda to Kanyakumari is 2 km per hour.)
(a) 40 km/hr towards the Rock & 39 km/hr while returning to Kanyakumari
(b) 41 km/hr towards the Rock & 38 km/hr while returning to Kanyakumari
(c) 42 km/hr towards the Rock & 36 km/hr while returning to Kanyakumari
(d) 35 km/hr towards the Rock & 39 km/hr while returning to Kanyakumari
98. A ladder just reaches a window that is 8 metres high above the ground on one side of the street. Keeping one end of the ladder at the same place, the ladder is moved to the other side of the street so as to reach a 12 metre high window. If the ladder is 13 metres long, what is the width of the street?
(a) 14.6 metres. (b) 15.8 metres.
(c) 15.2 metres. (d) 15.5 metres.
99. The total number of eight-digit landline telephone numbers that can be formed having at least one of their digits repeated is:
(a) 98185600 (b) 97428800
(c) 100000000 (d) None of the above
100. Suppose there are 4 bags. Bag 1 contains 1 black and $a^2 - 6^a + 9$ red balls, bag 2 contains 3 black and $a^2 - 6^a + 7$ red balls, bag 3 contains 5 black and $a^2 - 6^a + 5$ red balls and bag 4 contains 7 black and $a^2 - 6^a + 3$ red balls. A ball is drawn at random from a randomly chosen bag. The maximum value of probability that the selected ball is black, is
(a) $16/a^2 - 6^a + 10$ (b) $20/a^2 - 6^a + 10$
(c) $1/16$ (d) None of these

101. If the product of the integers a, b, c and d is 3094 and if $1 < a < b < c < d$, what is the product of b and c ?
- (a) 26 (b) 91
(c) 133 (d) 221
102. If decreasing 70 by X percent yields the same result as increasing 60 by X percent, then X percent of 50 is
- (a) 3.84
(b) 4.82
(c) 7.10
(d) The data is insufficient to answer the question
103. Capacity of tap Y is 60% more than that of X . If both the taps are opened simultaneously, they take 40 hours to fill the tank. The time taken by Y alone to fill the tank is
- (a) 60 hours (b) 65 hours
(c) 70 hours (d) 75 hours
104. The annual production in cement industry is subject to business cycles. The production increases for two consecutive years consistently by 18% and decreases by 12% in the third year. Again in the next two years, it increases by 18% each year and decreases by 12% in the third year. Taking 2008 as the base year, what will be the approximate effect on cement production in 2012?
- (a) 24% increase (b) 37% decrease
(c) 45% increase (d) 60% decrease
105. Mr. Mishra invested Rs. 25,000 in two fixed deposits X and Y offering compound interest @ 6% per annum and 8% per annum respectively. If the total amount of interest accrued in two years through both fixed deposits is Rs. 3518, the amount invested in Scheme X is
- (a) Rs. 12,000 (b) Rs. 13,500
(c) Rs. 15,000 (d) Cannot be determined
106. In 2011, Plasma – a pharmaceutical company – allocated Rs. 4.5×10^7 for Research and Development. In 2012, the company allocated Rs. 60,000,000 for Research and Development. If each year the funds are evenly divided among 2×10^2 departments, how much more will each department receive this year than it did last year?
- (a) Rs. 2.0×10^5 (b) Rs. 7.5×10^5
(c) Rs. 7.5×10^4 (d) Rs. 2.5×10^7
107. It takes 15 seconds for a train travelling at 60 km/hour to cross entirely another train half its length and travelling in opposite direction at 48 km/hour. It also passes a bridge in 51 seconds. The length of the bridge is
- (a) 550m (b) 450m
(c) 500m (d) 600m
108. At a reputed Engineering College in India, total expenses of a trimester are partly fixed and partly varying linearly with the number of students. The average expense per student is Rs. 400 when there are 20 students and Rs 300 when there are 40 students. When there are 80 students, what is the average expense per student?
- (a) Rs. 250 (b) Rs. 300
(c) Rs. 330 (d) Rs. 350
109. The Howrah-Puri express can move at 45 km/hour without its rake, and the speed is diminished by a constant that varies as the square root of the number of wagons attached. If it is known that with 9 wagons, the speed is 30 km/hour, what is the greatest number of wagons with which the train can just move?
- (a) 63 (b) 64
(c) 80 (d) 81
110. Z is the product of first 31 natural numbers. If $X = Z + 1$, then the numbers of primes among $X + 1, X + 2, \dots, X + 29, X + 30$ is
- (a) 30 (b) 2
(c) Cannot be determined (d) None of the above
111. A sum of Rs. 1400 is divided amongst A, B, C and D such that A 's share : B 's share = B 's share : C 's share
= C 's share : D 's share = $\frac{3}{4}$
How much is C 's share?
- (a) Rs. 72 (b) Rs. 288
(c) Rs. 216 (d) Rs. 384
112. The ratio of 'metal 1' and 'metal 2' in Alloy 'A' is 3 : 4. In Alloy 'B' same metals are mixed in the ratio 5:8. If 26 kg of Alloy 'B' and 14 kg of Alloy 'A' are mixed then find out the ratio of 'metal 1' and 'metal 2' in the new Alloy.
- (a) 3 : 2 (b) 2 : 5
(c) 2 : 3 (d) None of the above
113. Shyam, Gopal and Madhur are three partners in a business. Their capitals are respectively ₹4000, ₹8000 and ₹6000. Shyam gets 20% of total profit for managing the business. The remaining profit is divided among the three in the ratio of their capitals. At the end of the year, the profit of Shyam is ₹2200 less than the sum of the profit of Gopal and Madhur. How much profit, Madhur will get?
- (a) ₹1600 (b) ₹2400
(c) ₹3000 (d) ₹5000
114. Pawan retires at the age of 60 years and his employer gives him a pension of Rs. 3600 a year paid in half-yearly installments for the rest of his life. Assuming life expectancy in India is 70 years and interest is 6% per annum payable half-yearly, determine the present value of the pension. [Given, $(103)^{-20} = 0.55362$]
- (a) 26,728.50 (b) 26,744.40
(c) 27,782.80 (d) 26,782.80
115. Sumit works as a state contractor for PWD and supplies bitumen mix for road construction. He has two varieties of bitumen, one at Rs. 42 per kg and the other at Rs. 25 per kg. How many kg of first variety must Sumit mix with 25 kg of second variety so that he may, on selling the mixture at 40 per kg, gain 25 % on the outlay?
- (a) 30 (b) 20
(c) 25 (d) None of these
116. Swati and Rajani enter into a partnership with their capitals in the ratio 5 : 6. At the end of 7 months, Swati withdraws her capital. If they receive the profit in the ratio of 5 : 9, find how long Rajani's capital was used.
- (a) 10 months (b) 12 months
(c) 14 months (d) None of these
117. A motor boat can travel at 10 km/h in still water. It travelled 91 km downstream in a river and then returned, taking altogether 20 hours. Find the rate of flow of the river.
- (a) 3 km/hour (b) 5 km/hour
(c) 6 km/hour (d) 7 km/hour

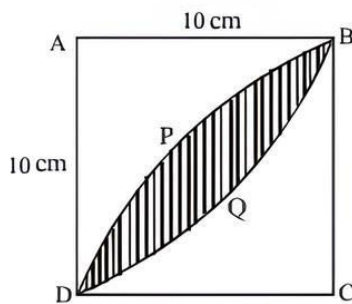
118. Given $A = \sin^2 \theta + \cos^4 \theta$, then for all real values of θ ,

- (a) $1 \leq A \leq 2$ (b) $\frac{3}{4} \leq A \leq 1$
 (c) $\frac{13}{16} \leq A \leq 2$ (d) $\frac{3}{4} \leq A \leq \frac{13}{16}$

119. In a family, a couple has a son and a daughter. The age of the father is three times of his daughter and the age of the son is half of his mother. The wife is nine years younger to her husband and the brother is seven years older than his sister. What is the age of the mother?

- (a) 40 years (b) 50 years
 (c) 45 years (d) 60 years

120. In the figure below, $ABCD$ is a square with side 10 cm. BPD is an arc of a circle with centre C . BQD is an arc of a circle with centre A . What is the area of the shaded region?



- (a) $(100 - 50\pi) \text{ cm}^2$ (b) $(100 - 25\pi) \text{ cm}^2$
 (c) $(50\pi - 100) \text{ cm}^2$ (d) $(25\pi - 100) \text{ cm}^2$

SECTION-D : Data Analysis & Sufficiency

DIRECTIONS (Qs. 121-125) : Each of the questions below consists of a question and two statements numbered (I) and (II) given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and give answer

- (a) if statement (I) ALONE is sufficient, but statement (II) alone is not sufficient;
 (b) if statement (II) ALONE is sufficient, but statement (I) alone is not sufficient;
 (c) if BOTH statements TOGETHER are sufficient, but NEITHER statement alone is sufficient;
 (d) if EACH statement ALONE is sufficient;
121. What was the total compound interest on a sum after three years?
 (I) The interest after one year was ₹ 100 and the sum was ₹ 1000.
 (II) The difference between simple and compound interest on a sum of ₹ 1000 at the end of two years was ₹ 10.
122. How many hours a day must 4 pumps work to empty a conical tank in 1 day?
 (I) 3 pumps working 8 hours a day can empty another tank in 2 days.
 (II) The other tank has twice the floor area and one and a half times the depth of the original tank.
123. How much is the average salary of the 30 assembly workers? The foreman is paid a salary of ₹ 12,000.
 (I) The total salary paid to the 30 assembly workers and the foreman is ₹ 312,000
 (II) The foreman's salary is 120% of the average salary of the 30 assembly workers.
124. A bag contains coins of one-rupee, 50-paise and 25-paise denominations. The total amount in the bag is ₹500. To find the total number of 50-paise coins, which of the following information is sufficient?
 (I) The number of the coin is in the ratio 3 : 4 : 5.
 (II) The number of one rupee-coins is one-fourth the total number of coins in the bag.
125. Two trains of length 80 m and 100 m are moving in opposite directions on parallel tracks. If they cross each other in 36 second, how much time will they take to pass each other if they move in the same direction?
 (I) First one train passes a pole in one minute.
 (II) The other train also passes a 120 m long railway bridge in one minute.

DIRECTIONS (Qs. 126-130) : Answer the questions on the basis of the following information :

The following is the wholesale price index (WPI) of a select list of items with the base year of 2006-07. In other words, all the item prices are made 100 in that year (2006-07). Prices in all other years for an item are measured with respect to its price in the base year. For instance, the price of cement went up by 1% in 2007-08 as compared to 2006-07. Similarly, the price of power went up by 3% in 2009-10 as compared to 2006-07.

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
All items	100	102.0	102.5	104.00	103.00	105.00	106.0	108.00	107.0	106.0
Cement	100	101.0	100.5	103.0	102.50	103.50	103.1	103.80	103.7	104.0
Limestone	100	102.0	102.5	102.75	102.25	103.00	104.0	105.00	104.5	105.0
Power	100	101.5	102.5	103.00	103.50	104.00	106.0	107.00	107.5	108.0
Steel	100	101.5	101.0	103.50	104.00	104.25	105.0	105.50	106.0	105.5
Timber	100	100.5	101.5	102.00	102.50	102.00	103.0	103.50	104.0	104.5
Wages	100	101.5	103.0	103.50	104.00	104.25	104.0	104.75	104.9	105.3

126. Let us suppose that one bag of cement (50 kgs) consumes 100 kgs of limestone and 10 units of power. The only other cost item in producing cement is in the form of wages. During 2006-07, limestone, power and wages contributed, respectively, 20%, 25% and 15% to the cement price per

bag. The average operating profit (% of price per cement bag) earned by a cement manufacturer during 2015-16 is closest to

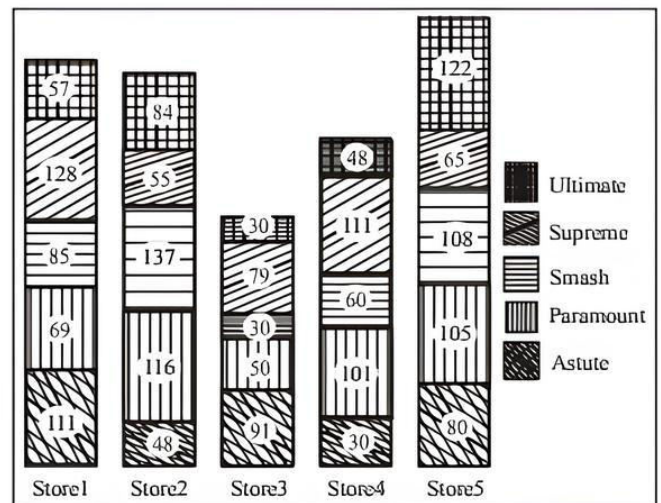
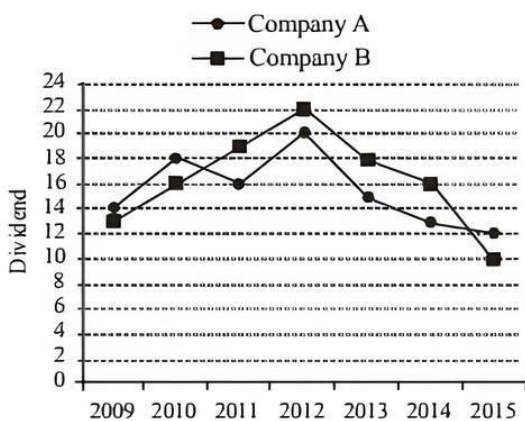
- (a) 40% (b) 39.5%
 (c) 38.7% (d) 37.5%

127. Steel manufacturing requires the use of iron ore, power and manpower. The cost of iron ore has followed the All Items index. During 2006-07 power accounted for 30% of the selling price of steel, iron ore for 25%, and wages for 10% of the selling price of steel. Assuming the cost and price data for cement as given in the previous questions, the operating profit (% of selling price) of an average steel manufacturer in 2015-16.
- is more than that of a cement manufacturer
 - is less than that of a cement manufacturer
 - is the same as that of a cement manufacturer
 - cannot be determined
128. Which item experienced continuous price rise during the ten-year period ?
- Power
 - Cement
 - Wages
 - Limestone
129. Which item(s) experienced only one decline in price during the ten-year period ?
- Steel and Limestone
 - Steel and Timber
 - Timber
 - Timber and Wages
130. Standing on a rock, Ravi said that Madurai was more than 3 km but less than 8 km from there. Prabhu said that it was more than 6 km but less than 10 km from there. If both of them are correct, how far is Madurai from the rock ?
- 8km
 - 6km
 - 7km
 - Cannot be determined
132. Anuja invested ₹ 35000 in Company B in 2011. After one year she transferred the entire amount with dividend to Company A in 2012 for one year. What amount will be received back by Anuja including dividend?
- ₹49980
 - ₹49000
 - ₹48300
 - ₹49563.50
133. An amount of ₹ 18000 was invested in Company A in 2012. After one year the same amount was re-invested for one more year. What was the total dividend received at the end of two years?
- ₹5805
 - ₹6300
 - ₹6480
 - ₹6840
134. Bhushan invested different amounts in Companies A and B in 2015 in the ratio of 5 : 8. What will be the ratio between the amounts of dividends received from Companies A and B respectively?
- 2 : 3
 - 5 : 6
 - 3 : 4
 - Cannot be determined
135. In the year 2014, Suraj invested ₹ 56000 in Company B. How much more or less dividend would he have received had the amount been invested in Company A?
- ₹ 1640 more
 - ₹ 1640 less
 - ₹ 1860 less
 - ₹ 1680

DIRECTIONS (Qs. 136-140): T-Nation, a T Shirt manufacturing company has unleashed 5-5-5 strategy, five brands (Ultimate, Supreme, Smash, Paramount, Astute), five sizes (S, M, L, XL, XXL), and five Stores (S1, S2, S3, S4, S5) to capture New Delhi market. Number of T-shirts in each of the store is given in the stacked bar chart below.

DIRECTIONS (Qs. 131-135): Study the following graph carefully to answer these questions.

Annual dividend offered by two companies over the years



131. Shri Giridhar invested total amount of ₹ 25000 in 2009 for one year in the two companies together and got a total dividend of ₹ 3340. What was the amount invested in Company A?
- ₹12000
 - ₹9000
 - ₹16000
 - Cannot be determined

- Note: Visibility of a brand in a store is given by number of T-shirts of the brand in the store by total number of T-Shirts in the store. Visibility across the stores is measured by sum of the scores of visibility of a brand in a store.
136. Which brand of T-shirt has more visibility across the stores?
- Astute
 - Supreme
 - Paramount
 - Smash

137. Which brand has lowest visibility score in any of the stores?
 (a) Astute (b) Smash
 (c) Paramount (d) Ultimate
138. Suppose, size M constitutes 22% of all the T-shirts owned by T-nation. It is also given that 'size M T-shirts' in stores 1, 2 and 5 are 10% of the total T-shirts in these stores. Then, the total number of T-shirts of size M in store 4 cannot be less than
 (a) 23 (b) 28
 (c) 32 (d) 44
139. What is the approximate share of Supreme brand in all stores together?
 (a) 19 (b) 22
 (c) 18 (d) 20
140. Approximately, by what percentage are Smash T-shirts greater than Ultimate T-shirts in all the stores together?
 (a) 79 (b) 50
 (c) 35 (d) 23

DIRECTIONS (Qs. 141-145): In the paragraph given below some informations are given about the selling of some items. Two values are coded as x and y . Study the given information for the value of x and y and answer as:

- (a) If $X > Y$
 (b) If $X < Y$
 (c) If $X = Y$
 (d) If $X \leq Y$

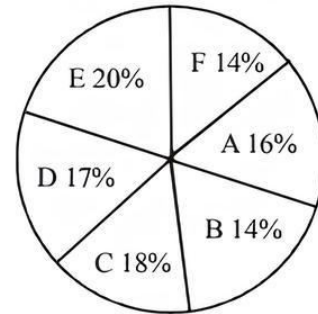
A shopkeeper has some electronic goods in his shop. Cost price of T.V is 40% less than the selling price of A.C. which is sold at 20% profit after a discount of 20%. Selling price of cooler is 50% less than the cost price of T.V and it is sold at 10% profit with a discount of 20%. T.V is sold at 20% profit with a discount of 40% and amount of discount on T.V is 24000. Laptop is sold at 30% discount and its cost price is two times to selling price of Mobile which is sold at 50% gain and 25% discount. Selling price of Laptop is 50% more than the selling price of A. C., and person got 20% profit on it.

141. X = Average cost price of A.C and Mobile
 Y = Cost price of Laptop
142. X = Average profit amount of all items
 Y = Average discount amount of all items.
143. X = Cost price of Cooler
 Y = Profit amount of Laptop
144. X = Profit amount of Mobile
 Y = Discount amount of Mobile
145. X = Marked price of Laptop
 Y = Marked price of A. C.

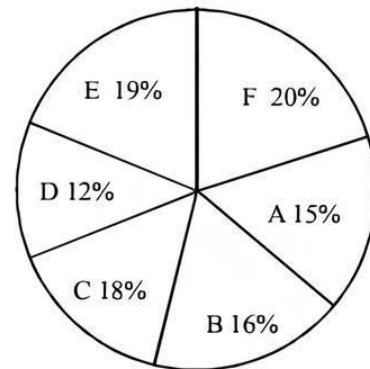
DIRECTIONS (Qs. 146-150): Study the following pie-charts and table to answer these questions.

State wise Details of the adult population of a country

Graduate and above
 Total no. = 24 lakhs



Upto XII STD pass
 Total no. = 32 lakhs



Male Female (M : F) Ratio

State	Graduate & Above	Upto XII Std Pass
	M : F	M : F
A	7 : 5	7 : 9
B	5 : 3	3 : 5
C	5 : 4	4 : 5
D	9 : 8	7 : 7
E	9 : 7	9 : 10
F	4 : 3	3 : 2

146. What is the difference between the Graduate male population and XII Std male population from State 'A'?
 (a) 24,000 (b) 14,000
 (c) 28,000 (d) 36,000
147. The Std XII male population of State C is what per cent of the total Std XII population of all the states together?
 (a) 8% (b) 12%
 (c) 11% (d) 9%
148. Total Graduate population of State F is what per cent of the total Std XII population of State A?
 (a) 56 (b) 72
 (c) 68 (d) None of these

149. What is the ratio of the total Graduate and Std XII male population of State A to the total Graduate and Std XII female population of that State?
- (a) 215:216 (b) 214:215
(c) 217:215 (d) 215:217
150. What is the ratio of the total Graduate population of State D to the total Std XII population of that State?
- (a) 17:16 (b) 16:17
(c) 64:51 (d) 51:64

DIRECTIONS (Qs. 151-155) : Study the following information carefully to answer these questions.

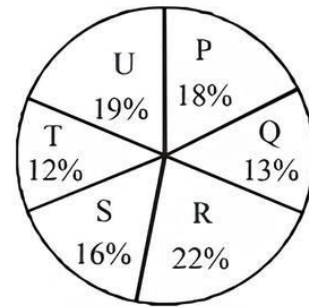
An Institute having 450 employees has sent all its employees for training in one or more areas out of HRM, Computer Skills and Financial Skills. The employees are classified into two categories – Officers and Clerks, who are in the ratio of 4 : 5. 10% of the Officers take training only in Computer Skills, 16% of the Clerks take training only in HRM which is equal to the number of Officers taking training only in Financial Skills and 50% of the number of Officers taking training in HRM and Financial Skills both. 6% of the total employees take training in all the three, of which two-thirds are officers. 10% of the total employees take training in HRM and Computer Skills both, which is five times the number of Clerks taking training in Computer Skills and Financial Skills. 10% of the Clerks take training in HRM and Computer Skills both. The number of officers taking training only in HRM is 25% of the number of Clerks taking training only in HRM. 20% of the total number of employees take training only in Computer Skills. Number of clerks taking training in HRM and Financial skills both is 20% of the total number of Clerks.

151. Total how many officers take training in HRM?
- (a) 110 (b) 128
(c) 92 (d) 118
152. Total how many Clerks take training in Computer Skills but not in HRM?
- (a) 70 (b) 113
(c) 88 (d) 79
153. Total how many employees take training in Financial Skills but not in HRM?
- (a) 108 (b) 162
(c) 127 (d) 160
154. Total how many Clerks take training in Financial Skills?
- (a) 115 (b) 106
(c) 47 (d) 124
155. What per cent of the total number of Officers take training in Computer Skills but not in Financial Skills?
- (a) 25% (b) 40%
(c) 20% (d) 11%

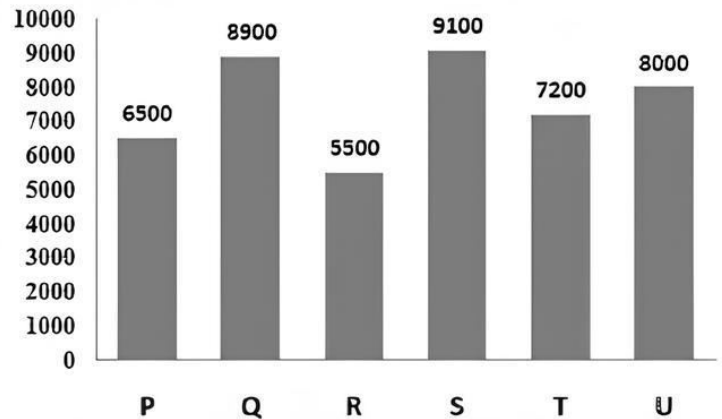
DIRECTIONS (Qs. 156-160) : Study the following graph to answer the following questions

Total number of students = 90,000

% of Students in 10th in 6 different states



Number of Boys student in each district out of 90,000



156. The no of girls students in District T is what % of the total no students in District Q?
- (a) 47% (b) 31%
(c) 37% (d) 40%
157. What is the average number of boys students in all the districts together?
- (a) 7533 (b) 7355
(c) 7550 (d) 7300
158. What is the difference between the number of girls students in District P and the total number of students in District R?
- (a) 11000 (b) 9700
(c) 10000 (d) 10100
159. What is the ratio of the no of boys in District U to the total no of girls in District S?
- (a) 43:76 (b) 50:75
(c) 53:80 (d) 80:53
160. What is the total no of students in District P,R and T?
- (a) 46000 (b) 46800
(c) 48600 (d) 45000

SECTION-E : Indian & Global Environment

161. Project Loon, that aims at providing Internet access to rural and remote areas is being developed by which company?
- (a) Facebook (b) Google
(c) Microsoft (d) Apple

162. Which among the following is NOT a member of Organisation of the Petroleum Exporting Countries (OPEC)?
 (a) Saudi Arabia (b) UAE
 (c) Qatar (d) Bahrain
163. The Indian Rupee Symbol has been designed by:
 (a) V. K. Shinde
 (b) Udaya Kumar
 (c) Abhimanyu Saraswat
 (d) Ved Prakash Sharma
164. Syed Mushtaq Ali Trophy is associated with which sport?
 (a) Hockey (b) Cricket
 (c) Badminton (d) Football
165. 'Relationship Beyond Banking' is the tagline of which public sector bank?
 (a) Bank of Baroda
 (b) State Bank of India
 (c) Bank of India
 (d) Corporation Bank
166. Which is the parent company of Maggi?
 (a) Britannia (b) Sunfeast
 (c) Parle (d) Nestle
167. Pench Tiger Reserve is located in which Indian State?
 (a) Maharashtra (b) Mizoram
 (c) Gujarat (d) Madhya Pradesh
168. Match column I with column II and select the correct answer using the codes given below:

Column - I	Column - II
A. Ghettos	1. Russian parliament
B. Reichstag	2. Jacobins
C. Duma	3. German Parliament
D. Sans Culottes	4. Areas of jews

 (a) A - 2, B - 3, C - 4, D - 1
 (b) A - 4, B - 3, C - 1, D - 2
 (c) A - 3, B - 4, C - 2, D - 1
 (d) A - 4, B - 1, C - 3, D - 2
169. The first Indira Gandhi Award for International Justice and Harmony has been given to
 (a) Larry Pressler
 (b) Amnesty International
 (c) Hussain Ibrahim Zaki
 (d) Yasser Arafat
170. In which year of First World War Germany declared war on Russia and France?
 (a) 1914 (b) 1915
 (c) 1916 (d) 1917
171. India's first Technicolor film _____ in the early 1950s was produced by _____
 (a) 'Jhansi Ki Rani', Sohrab Modi
 (b) 'Jhansi Ki Rani', Sir Syed Ahmed
 (c) 'Mirza Ghalib', Sohrab Modi
 (d) 'Mirza Ghalib', Munshi Premchand
172. The Olympic Flame, was, for the first time, ceremonially lighted and burnt in a giant torch at the entrance of the stadium at
 (a) Athens Games (1896)
 (b) London Games (1908)
 (c) Paris Games (1924)
 (d) Amsterdam Games (1928)
173. The apex body for formulating plans and coordinating research work in agriculture and allied fields is
 (a) State Trading Corporation
 (b) Regional Rural Banks
 (c) National Bank for Agriculture and Rural Development (NABARD)
 (d) Indian Council of Agricultural Research
174. Fiscal deficit in the Union Budget means
 (a) the difference between current expenditure and current revenue
 (b) net increase in Union Governments borrowings from the Reserve Bank of India
 (c) the sum of budgetary deficit and net increase in internal and external borrowings
 (d) the sum of monetized deficit and budgetary deficit
175. Which of the following statements is true in relation to the functions of the National Commission for Minorities?
 (a) Evaluate the progress of the development of minorities under the Union and States
 (b) Conduct studies, research and analysis on the issues relating to socio-economic and educational development of minorities
 (c) Monitor the working of the safeguards provided in the Constitution and in laws enacted by Parliament and the State Legislatures
 (d) All of the above
176. Which of the following is a tax that an employer has to pay for the benefits that are given to his/her employees?
 (a) Fringe Benefit Tax
 (b) Corporate Tax
 (c) Wealth Tax
 (d) Service Tax
177. Which of the following article of Indian constitution abolishes Untouchability?
 (a) Article 17 (b) Article 15(A)
 (c) Article 16(4A) (d) Article 46
178. Which of the following poverty is caused by a sudden crisis or loss and is often temporary?
 (a) Chronic Poverty
 (b) Structural Poverty
 (c) Absolute Poverty
 (d) Situational Poverty
179. Which of the following is an accounting process by which a company allocates an asset's cost throughout its useful life?
 (a) Inflation (b) Revaluation
 (c) Deflation (d) Depreciation
180. In which Indian city, the country's biggest Pharma Conference "India Pharma & India Medical Device 2018: Affordable and Quality Healthcare", is held at?
 (a) Mysore (b) Bengaluru
 (c) Ahmadabad (d) Pune

181. Name the Indian Architect who won the architecture's highest honour - the Pritzker Prize 2018 for the first time?
 (a) Laurie Baker
 (b) Raj Rewal
 (c) Rahul Mehrota
 (d) Balkrishna Vitthal Das Doshi
18. Which state government has decided to ban the use of plastic from March 18, 2018?
 (a) Madhya Pradesh (b) Maharashtra
 (c) Odisha (d) Goa
183. Who was reappointed the president of China?
 (a) Patsy Mink (b) Norman Mineta
 (c) Wang Qishan (d) Xi Jinping
184. A two-day coastal security exercise 'Sagar Kavach' began on April 24, 2018 along the shores of which state?
 (a) Kerala (b) Tamil Nadu
 (c) Gujarat (d) Maharashtra
185. On May, 2018, NITI Aayog signed a Statement of Intent (SOI) with which IT Company to introduce technology to farmers to improve the Productivity of Crops?
 (a) Wipro (b) Accenture
 (c) IBM (d) Google
186. India celebrates 'National Voters Day' on which date every year?
 (a) 25th January (b) 26th January
 (c) 27th January (d) 28th January
187. Which Indian cricketer has been awarded the "most inspiring icon of the year for Social Welfare" award by the Dadasaheb Phalke International Film Festival (DPIFF)?
 (a) Rahul Dravid (b) Sachin Tendulkar
 (c) Yuvraj Singh (d) Virat Kohli
188. On May 29, 2018, Government of India announced that Defence Secretary ____ has been given Additional charge of DRDO?
 (a) David Kingsley (b) S. Christopher
 (c) Sanjay Mitra (d) Paramesh Nair
189. In May 2018, who became the only woman in the world to climb three highest peaks in Nepal above 8,000 meters in one season within 25 days?
 (a) Himantha Basu
 (b) Nima Jangmu Sherpa
 (c) Arunima Sharma
 (d) Poorvi Jain
190. Where was the First workshop on Ayushman Bharat Program held on May 14, 2018?
 (a) Shimla, Himachal Pradesh
 (b) Chennai, Tamil Nadu
 (c) Mumbai, Maharashtra
 (d) Nagpur, Maharashtra
191. who was appointed by World Economic Forum (WEF) as a member to its Managing board?
 (a) Anita Nair (b) Sarita Nayyar
 (c) Aruna Reddy (d) Paramesh Nair
192. Which of the following is not correct about artificial intelligence-driven banking chatbot?
 (a) It can handle millions of customer queries across multiple channels.
 (b) It can provide answers in simple language in less than 0.4 seconds.
 (c) HDFC Bank in collaboration with ICICI Bank launched it for the first time.
 (d) It can handle real banking transactions
193. Bharat QR Code is related to which sector of Indian economy?
 (a) Banking Sector
 (b) Hospitality Sector
 (c) Quality Control
 (d) Education Sector
194. According to the law of diminishing marginal utility, as the amount of a good consumed increases, the marginal utility of that good tends to -
 (a) improve
 (b) diminish
 (c) remain constant
 (d) first diminish and then
198. Which one of the following is the maximum age of joining National Pension System (NPS) under the NPS-Private Sector?
 (a) 55 years (b) 60 years
 (c) 65 years (d) 70 years
196. Which of the following best defines a floating-rate bond?
 (a) A bond with a fixed interest rate and has better yield than varying interest rate bond
 (b) A bond with a fixed interest rate and has lower yield than varying interest rate bond
 (c) A bond with varying interest rate and has better yield than fixed interest rate bond
 (d) A bond with a varying interest rate and has lower yield than fixed interest rate bond
197. The Scientific study of the movement, distribution and quality of water on earth, including water resources and environmental watershed sustainability is known as -
 (a) Hydrology (b) Meteorology
 (c) Aerography (d) Cerography
198. Which of the following is a "Fire and Forget" anti tank missile?
 (a) Trishul (b) Agni
 (c) Akash (d) Nag
199. Aizawl is the capital of which North-Eastern state of India?
 (a) Arunachal Pradesh
 (b) Meghalaya
 (c) Mizoram
 (d) Manipur
200. Abbreviation 'SEBI' stands for:
 (a) Securities and Earnings Board of India
 (b) Standards and Exchange Board of India
 (c) Safety and Environment Board of India
 (d) Securities and Exchange Board of India

HINTS & EXPLANATIONS

1. (a) The word **Loquacious (Adjective)** means : talking a lot; talkative. Option (a) is the right synonym while others have different meanings.
2. (c) The word **Vindictive (Adjective)** means : trying to harm or upset somebody or showing that you want to, because you think that they have harmed you; spiteful; revengeful. Option (c) spiteful is the correct synonym as it means-having or showing a desire to harm, anger or defeat someone.
3. (c) The word **Inclement (Adjective)** means : not pleasant; unfavourable; cold, wet etc.
4. (b) The word **Florid (Adjective)** means : rosy; gaudy; ornated; red; having too much decoration or detail. The word **Pale (Adjective)** means : light in colour; not strong or bright; having skin that is almost white because of illness. Hence, the words **florid** and **pale** are antonymous.
5. (c) The word **Verity (Noun)** means : a belief or principle about life that is accepted as true; truth. Hence, the words **verity** and **falsehood** are antonymous.
6. (a) The word **Perspicuity (Noun)** means : clarity. The word **vagueness (Noun)** means : no clarity in a person's mind.
7. (b) Replace "has" with "have".
8. (d)
9. (c) Replace "is" with "are". Plural verb should be used here ...that 'are' essential to achieve this objective. Also do not get confused with "not only" case, there is no error in this. Case of 'not only' 'but also'- When but is included you can either add 'also' (or its alternatives) or not; both forms are common and standard. Hence the parentheses in but (also), which could also be written as (but) also, since but sometimes doesn't appear either.
10. (d) All are true.
11. (c) Only (A) and (C).
12. (a) Only (B).
13. (a) These will bring about only minor growth.
14. (d) All (A), (B) and (C).
15. (d) It can be deciphered from the first paragraph.
16. (d) It is mentioned in the fourth paragraph.
17. (c) It is mentioned in the last paragraph.
18. (c) It is mentioned in the second paragraph.
19. (a) It is mentioned in the fifth paragraph.
20. (c) This is the answer to the first question.
21. (a) This can be inferred from the last paragraph of the answer to the second question. It can also be inferred from the answer to the third question.
22. (d)
23. (d) It is mentioned in the answer to the second question where social forestry has been criticised and community forestry has been offered as solution.
24. (a) It is mentioned in the answer to the third question.
25. (a) It is mentioned at the end of the first paragraph.
26. (d) All the statements are mentioned in the passage.
27. (b) It is mentioned towards the end of the second paragraph.
28. (d)
29. (d)
30. (d)
31. (d)
32. (a)
33. (d) 'were ordered to trace'- it is obvious that the police stations were ordered to trace the identity as the body mentioned in the statement is a dead body which is taken into custody.
34. (a) 'can be implemented'- as the schemes can only be implemented.
35. (d) 'are engaged in an unclean'- the form mentioned in the given sentence simply reflects that it has asked about whether the parents are involved in that unclean occupation
36. (c) Deceit used in order to achieve one's goal.
37. (b) A person who attacks or criticizes cherished beliefs or instructions.
38. (a) Phrase 'water under the bridge' means: problems that someone has had in the past that they do not worry about because they happened a long time ago and can't be changed now.
39. (b) Idiom 'stick to one's gun' means: to remain determined or steadfast in one's opinion.
40. (d) Phrase 'Out of hand' means: without taking time to think, quickly.
41. (d) Can't be determined.
42. (c)

	-2	-3	-4	-5	
ZB	↓	↓	↓	↓	↓
XD	UG	QK	LP		
↑	↑	↑	↑	↑	
+2	+3	+4	+5		
43. (d) 'NUP'
44. (d) Raman scores the highest and Tony gets the least. Vickey always scores more than Priya which in turn scores more than Ankit. If Sunil is ranked sixth and Ankit is ranked fifth then considering above (a) and (c) is ruled out. (b) is also not possible. only (d) is true. Hence (d) is correct option.
45. (c) From the same conclusion as in the previous question. If Raman gets the highest then Vickey should not be ranked lower than fourth.

Sol.: (60-62).

From the given information

We can infer that

Admin → E & G (female)

Finance → C, A and one of B & E

Logistics → H and one of B & E.

Order of income → G > H > A > F, B, E > C

60. (d) Finance department will have 3 people.
 61. (a) B earns less than A and H.
 62. (a) H is at 2nd position in descending order of income.
 63. (c) j and I are at even places, while U and Y are at odd places in alphabet. July is the first month of second half of a year.
 64. (d) Suppose two unequal numbers of coins are x and y, then according to question

$$48(x - y) = x^2 - y^2$$

$$48(x - y) = (x + y)(x - y)$$

$$(x - y)(x + y) - 48(x - y) = 0$$

$$(x - y)(x + y - 48) = 0$$

But $x - y \neq 0$ (since $x \neq y$)

$$\therefore x + y - 48 = 0$$

$$\therefore x + y = 48$$

total coins = 48

Sol.: (65-68)

65. (a) It is given that G is adjacent to J and P is adjacent to S and M is adjacent S. Then we will have the following order:



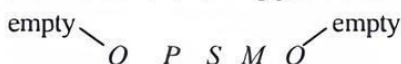
Now as per information, a signal can reach from one conductor to other conductor only if the two conductors are adjacent to each other. Hence, J and K would be adjacent. And if J and K are adjacent, then we will have the order G J K. It means that a signal can be transferred from G to K.

66. (c) If K is adjacent to P, then we shall have the following position :



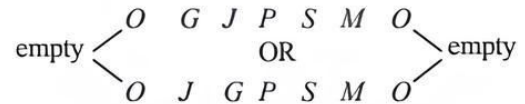
Hence, J cannot be directly adjacent to P.

67. (b) If P is directly adjacent to an empty position, then we shall have the following position of conductors :



Hence, greatest number of conductors in transferring a single signal is three.

68. (d) If a signal is transferred from G to S, then following all the conditions, we have the following positions.



It is therefore, clear that P cannot be adjacent to an empty position.

69. (a) We can only conclude I but we cannot say anything about the number of people doing this.
 70. (b) The advertisement is given to attract customers, hence (b) is correct but we cannot say what the majority is interested in.
 71. (b) The notice is given to help the children who are susceptible but we cannot say what they prefer.
 72. (c) Both statements are implicit.
 73. (b) Either I or II can be advised. Water supply authority must partial cut in supply to tackle the situation or appeal to all residents for minimum use of water.
 74. (c) I is not advisable because from this decision virus negative person would be also affected. II will be the right action to tackle the situation.
 75. (a) It is duty of government to make alternative arrangement. So, I is advisable. II is not advisable because it will be extreme action and against of fundamental right.
 76. (a) Increased capacity of train will be helpful to tackle the situation, so it is advisable. II is not advisable, what is meaning of this advise for those people who want to utilise holiday. Hence only I follows.
 77. (c) Event (A) is the effect but event (B) is not its immediate and principal cause because to get the above outcome proper use of rich mineral resources is equally important.
 78. (b) It is the parliament's nod to Tobacco Control Bill, which gave the non-smokers a new horizon.
 79. (b) Event (B) is the effect and event (A) is the immediate and principal cause behind it. The move taken by the Food and Adulteration Department is the result of the claim made by the people.
 80. (b) Once again, event (A) is the immediate and principal cause of event (B). The demand sought by the parliamentarians is due to the report revealed by the NGO.
 81. (b) Let height of the liquid level before dropping the ball be h .

Here, radius of the surface of the liquid level is $3 + 1 = 4$ cm.

Since, bucket contains 200 cc. of liquid.

$$\therefore \frac{h\pi}{3} (4^2 + 3^2 + 4 \times 3) = 200 \Rightarrow \frac{h\pi}{3} (37) = 200$$

$$\Rightarrow h = \frac{600}{37\pi} \quad (1)$$

The radius of the surface of the liquid level after the solid metal ball is dropped is 4.3 cm.

Now, volume of the solid metal ball = volume of the liquid after dropping the ball – Original volume of liquid in the bucket.

$$= \frac{1.3h}{3} \pi ((4.3)^2 + 3^2 + 4.3 \times 3) - 200$$

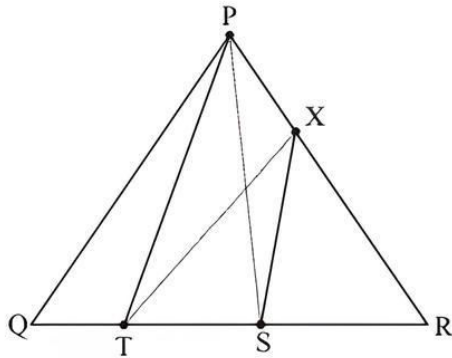
Put the value of h from equation (1),
Volume of the solid metal ball

$$= \frac{1.3}{3} \times \frac{600}{37\pi} \times \pi [18.49 + 9 + 12.9] - 200$$

$$= \frac{260}{37} \times 40.39 - 200$$

$$= 83.82 \text{ cc} \approx 80 \text{ cc.}$$

82. (a)



Given area of $\Delta PQR = 5.8 \text{ sq.cm.}$

\therefore S is the midpoint of QR.

$$\therefore \text{area of } \Delta PSR = \frac{1}{2} (\text{ar } \Delta PQR) = \frac{5.8}{2} = 2.9 \text{ sq.cm}$$

(\because median divides a triangle into two triangles of equal area.)

Now, $PT \parallel XS$.

Hence, area of $\Delta XSP = \text{area of } \Delta XST$.

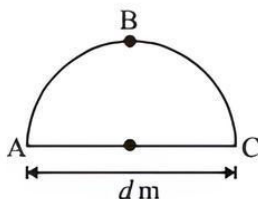
\Rightarrow area of $\Delta XSP + \text{area of } \Delta XSR = \text{area of } \Delta XST + \text{area of } \Delta XSR$

\Rightarrow Area of $\Delta PSR = \text{Area of } \Delta RTX$.

Hence, area of $\Delta RTX = 2.9 \text{ sq.cm.}$

83. (b) Let diameter of the semicircular playground is

$AC = d \text{ m}$



According to the question,

$$\text{Walking speed of Joseph} = \frac{50}{60} = \frac{5}{6} \text{ m/sec.}$$

Now, $AC = d \text{ m}$ and $ABC = \frac{\pi d}{2}$

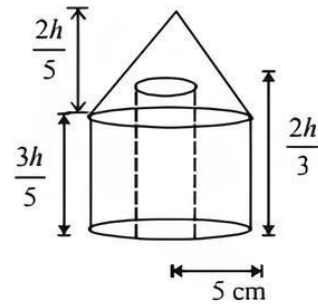
$$\text{then, } \frac{\frac{\pi d}{2} - d}{\frac{5}{6}} = 48$$

$$\frac{\pi}{2}d - d = 40$$

$$\left(\frac{\pi}{2} - 1\right)d = 40$$

$$d = \frac{40}{\frac{\pi}{2} - 1} = \frac{40}{0.57} \approx 70 \text{ m}$$

84. (d) Let the height of the metallic solid is $h \text{ cm}$ and radius of hole is $r \text{ cm}$.



Then, height of the cone = $\frac{2h}{5}$

Height of the cylinder = $\frac{3h}{5}$

Height of the hole = $\frac{2h}{3}$

According to the question,

$$\pi r^2 \times \frac{2}{3}h = \frac{1}{3} \left[\pi(5)^2 \times \frac{3h}{5} + \frac{1}{3} \pi(5)^2 \times \frac{2h}{5} - \pi r^2 \cdot \frac{2h}{3} \right]$$

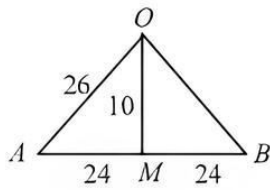
After removing common terms from both sides

$$2r^2 = \left[15 + \frac{10}{3} - \frac{2r^2}{3} \right]$$

$$\frac{8r^2}{3} = \frac{55}{3}$$

$$r = \sqrt{\frac{55}{8}} \text{ cm.}$$

85. (c)



$$\text{Area} = \frac{1}{2} AB \times OM \quad \text{Area} = \frac{1}{2} \times 48 \times 10 = 240$$

$$\text{Area of sector } OAPB = \frac{\pi(26)^2 \times x}{360}$$

$$\text{Shaded portion} = \frac{676\pi x}{360} - 240 \text{ cm}^2.$$

86. (b) The total no. of arrangement

$${}^{15}C_3 \times 3! = \frac{15!}{12!} = 15 \times 14 \times 13 = 2730$$

87. (d) Number of ways in which a candidate can fail to secure cut offs.

$$= {}^6C_0 + {}^6C_1 + {}^6C_2 + \dots + {}^6C_5 = 2^6 - 1 = 63.$$

88. (b) Rahul has scored 240 marks in first three quizzes. i.e.

$$\text{Average marks for three quizzes} = \frac{70 + 90 + 80}{3} = 80$$

So, to get an average internal marks more than 80, he has to score more than 80 marks in the last quiz. This is Possible if,

I. He attempts 9 questions correctly Now, Number of ways to attempt 9 questions correctly out of 10 questions = ${}^{10}C_9 = 10$ ways

II. He attempts all 10 questions correctly number of originally ways = 2

$$\text{Total Number of ways} = 2^{10} = 1024$$

$$\therefore \text{Required probability} = \frac{10 + 1}{1024} = \frac{11}{1024}$$

89. (c) Let Arvind's Age in 2004 is A years 10

So, Rohini's Age = 3A years old

Now, in 2014

Arvind's Age = A + 10

Rohini's Age = 3A + 10

$$\therefore 3A + 10 = A + 10 + 6$$

$$2A = 6 \Rightarrow A = 3$$

\therefore Rohini's Age in 2004 would be 9 years. Clearly she was born in year (2004 - 9) = 1995 year

90. (d) Let there be 'x' inlet pipes

\therefore outlet pipes = (11 - x)

Now, According to question

$$\frac{x}{7} - \frac{(11-x)}{5} = -1/7$$

$$\frac{5x - 77 + 7x}{35} = -1/7$$

$$12x = 72$$

$$x = 6$$

\therefore Number of inlet pipes = 6

91. (b) Let minimum number of wages to be printed be x.

$$\text{So, } 5000 + 1.8x = 8000 + 1.5x$$

$$x = 10,000$$

92. (b) P can do a job in 42 days

\therefore Q is 26% more efficient than P

$$\Rightarrow 1.26Q = 42$$

$$Q = \frac{42}{1.26}$$

$$\Rightarrow \frac{100}{3} \text{ day's} \quad \dots(1)$$

\therefore R is 50% more efficient than Q

$$1.5R = \frac{100}{3}$$

$$R = \frac{200}{9} \text{ days} \quad \dots(2)$$

$$Q \text{ and } R \text{ would take} = \left(\frac{\frac{100}{3} \times \frac{200}{9}}{\frac{100}{3} + \frac{200}{9}} \right) \text{ days}$$

$$= \frac{40}{3} \text{ days}$$

$$= 13\frac{1}{3} \text{ days} \approx 13 \text{ days.}$$

93. (a) P Q

10 kg 45 kg

Silver 4.5 kg $0.3 \times 45 = 13.5 \text{ kg}$

Aluminium 5.5

Copper - $0.35 \times 45 = 15.75 \text{ kg}$

\therefore In the alloy of 55 kg

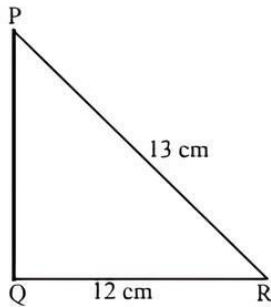
Silver = 4.5 + 13.5 kg = 18 kg

Copper = 15.75 kg.

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

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

94. (a) $PQ = \sqrt{(13)^2 - (12)^2} = \sqrt{169 - 144} = \sqrt{25} = 5 \text{ cm}$



\therefore Area of the right $\triangle PQR = \frac{1}{2} \times 12 \times 5 = 30 \text{ cm}^2$

95. (d) According to question, shared of ratio of P, Q and R will be

$$= 12 \times 6 : 8 \times \left(\frac{9}{8} \times 8\right) : 9 \times 12 = 12 \times 6 : 8 \times 9 : 9 \times 12$$

$$= 2 : 2 : 3$$

$$\text{R's Profit} = \frac{6750}{2} \times 3 = ₹10125$$

96. (d) Final concentration of milk after I customer = $40 \times \frac{10}{40}$

Final concentration of milk after II customer

$$= 40 \times \frac{1}{4} \times \left(1 - \frac{1}{4}\right)$$

Final concentration of milk after III customer

$$= 40 \times \frac{1}{4} \times \left(1 - \frac{1}{4}\right)^2$$

Final concentration of milk after IV customer

$$= 40 \times \frac{1}{4} \times \left(1 - \frac{1}{4}\right)^3$$

Final concentration of milk after V customer

$$= 40 \times \frac{1}{4} \times \left(1 - \frac{1}{4}\right)^4 = 40 \times \frac{1}{4} \times \frac{3}{4} \times \frac{3}{4} \times \frac{3}{4} \times \frac{3}{4} = \frac{405}{128}$$

97. (c) $\overbrace{\quad\quad\quad}^{27}$ $\overbrace{\quad\quad\quad}^{73}$
Kanyakumari Vivekanand Rock

speed of ferry in upstream = $20 - 2 = 18 \text{ km/h}$

Time after which hole was detected = 90 min

$$\text{So distance covered} = 18 \times \frac{90}{60} = 27 \text{ km}$$

Distance yet to be covered = $100 - 27 = 73 \text{ km}$

Now the boat has to travel 73 km towards Vivekanand

rock and then 100 km back to Kanyakumari is $4\frac{1}{2}$

hours

Let x_1 be the speed of boat towards

Vivekanand rock and x_2 be the speed of boat towards Kanyakumari

$$\therefore \frac{73}{x_1 - 2} + \frac{100}{x_2 + 2} = \frac{9}{2}$$

In this equation if we substitute

$$x_1 = 42 \text{ km/hr}$$

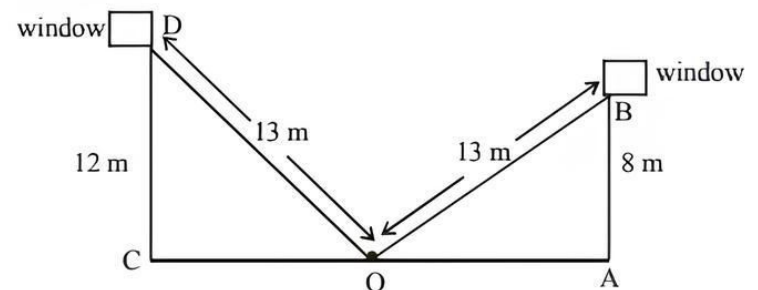
$$x_2 = 36 \text{ km/hr}$$

$$\frac{73}{42 - 2} + \frac{100}{36 + 2} = \frac{9}{2}$$

which is true

So option (c) is correct

98. (c)



Let OB be the ladder whose length is 13 m

So, $OD = OB = 13 \text{ m}$

width of street = AC

$$= OC + OA$$

$$OC = \sqrt{(13)^2 - (12)^2}$$

$$= \sqrt{169 - 144}$$

$$= \sqrt{25} = 5 \text{ m}$$

Similarly

$$OA = \sqrt{(13)^2 - (8)^2} = \sqrt{169 - 64}$$

$$= \sqrt{105} = 10.2 \text{ m}$$

Now, width of street = OC + OA

$$= 5 \text{ m} + 10.2 \text{ m}$$

$$= 15.2 \text{ cm.}$$

99. (a) The total number of 8-digit landline telephone number that can be formed having at least one of their digits related

The total number of 8-digit

landline number = $10^8 = 10,00,00,000$

The no of 8-digit landline number in which no digit

$$\text{is repeated} = \frac{10!}{2} = 18,14,400$$

\therefore Number of required landline number

$$= 10000000 - 1814400 = 98185600$$

So option (a) is correct.

100. (d) Each bag has $a^2 - 6a + 10$ balls.

Bags 1, 2, 3 and 4 contain 1, 3, 5 and 7 black balls respectively.

Probability of selecting a black ball from a specific bag is

$\frac{n}{a^2 - 6a + 10}$, where n is the number of black balls in that bag.

A bag is selected at random.

$$\therefore \text{Probability of selecting a particular bag} = \frac{1}{4}$$

\therefore Probability that the ball selected from that randomly chosen bag is black

$$= \frac{1}{4} \left(\frac{1}{a^2 - 6a + 10} \right) + \frac{1}{4} \left(\frac{3}{a^2 - 6a + 10} \right)$$

$$+ \frac{1}{4} \left(\frac{5}{a^2 - 6a + 10} \right) + \frac{1}{4} \left(\frac{7}{a^2 - 6a + 10} \right)$$

$$= \frac{1}{4} \left(\frac{16}{a^2 - 6a + 10} \right) = \frac{4}{a^2 - 6a + 10}$$

101. (b) $3094 = 2 \times 7 \times 13 \times 17 = a \times b \times c \times d$

As $1 < a < b < c < d$

$$\therefore a = 2, b = 7, c = 13, d = 17$$

$$\Rightarrow b \times c = 7 \times 13 = 91$$

102. (a) $70 - \frac{x}{100} \times 70 = 60 + \frac{x}{100} \times 60$

$$\therefore 10 = \frac{70x}{100} + \frac{60x}{100} \Rightarrow x = \frac{100}{13}$$

$$x\% \text{ of } 50 = \frac{100}{13} \times \frac{1}{100} \times 50 = 3.84$$

103. (b) Tap X does x units of work in 1 hour.

\therefore Tap Y does 1.6 units of work in 1 hour.

\therefore In 1 hour Tap X and Y together do $2.6x$ units of work.

\therefore Work done by Tap X and Y in 40 hours = $2.6x \times 40$

\therefore Time taken by Tap Y alone to do this work

$$= \frac{2.6x \times 40}{1.6x} = 65 \text{ hours}$$

104. (c) Let the annual product be 100 unit. Product after 4 years (i.e. in 2012)

$$100 \times \frac{118}{100} \times \frac{118}{100} \times \frac{88}{100} \times \frac{118}{100} = 144.58 \text{ unit}$$

So, the percentage increase in production after 4 years = $44.58\% = 45\%$

Hence, option (c) is correct.

105. (c) Let Mishra invested Rs x in fixed deposit X then he will invest Rs. $(25000 - x)$ in fixed deposit Y
CI on Rs. x after 2 years at 6% per annum

$$= x \left\{ \left(1 + \frac{6}{100} \right)^2 - 1 \right\}$$

$$= x \left\{ \frac{309}{2500} \right\} \quad \dots(1)$$

CI on Rs. $(25000 - x)$ after 2 years at 8% per annum

$$= (25000 - x) \left\{ \left(1 + \frac{8}{100} \right)^2 - 1 \right\}$$

$$= (25000 - x) \left\{ \frac{416}{2500} \right\}$$

$$= 4160 - \frac{416x}{2500} \quad \dots(2)$$

Total amount of interest accrued in two years = Rs. 3518

From (1) and (2)

$$\frac{309x}{2500} - \frac{416x}{2500} + 4160 = 3518$$

$$x = \text{Rs. } 15,000$$

Investment in deposit X = Rs. 15,000

Hence, option (c) is correct.

106. (c) Fund allotted in 2011 = Rs. 4.5×10^7

No. of department = 2×10^2

$$\text{Fund to each department in 2011} = \frac{4.5 \times 10^7}{2 \times 10^2}$$

$$= \frac{4.5 \times 10^5 \times 10^2 \times 10^4}{2 \times 10^2} = \text{Rs. } 22.5 \times 10^4 \quad \dots(1)$$

Fund allotted in 2012 = $60,000,000 = 6 \times 10^7$

Fund to each department in 2012

$$= \frac{6 \times 10^2 \times 10^5 \times 10^4}{2 \times 10^4}$$

$$= \text{Rs. } 30 \times 10^4 \quad \dots(2)$$

Extra amount that each department will receive in 2012 = Rs. $(30 \times 10^4 - 22.5 \times 10^4) = \text{Rs. } 7.5 \times 10^4$

Hence, option (c) is correct.

107. (a) Let the length of travelling at 60 km/hr = x km

the length of train travelling at 48 km/hr = $\frac{x}{2}$ km

Since they are travelling in opposite direction

Resultant speed = $(60 + 48)$ km/hr = 108 km/hr

It takes 15 sec for the first train to cross other train.

$$\text{Total distance travelled in 15 sec} = \left(x + \frac{x}{2}\right) \text{ km}$$

$$= \frac{3x}{2} \text{ km}$$

$$\text{So, } \frac{15}{60 \times 60} = \frac{3x/2}{108} \left\{ \text{Time} = \frac{\text{distance}}{\text{speed}} \right\}$$

$$\frac{3x}{2} = \frac{15 \times 108}{60 \times 60}$$

$$x = \frac{15 \times 108 \times 2}{60 \times 60 \times 3} = \frac{3}{10} \text{ km}$$

It passes a bridge in 51 sec, that means it has to cover its own length plus length of bridge.

Let the length of bridge = a km

$$\text{Total distance to be covered in 51 sec} = \left(a + \frac{3}{10}\right) \text{ km}$$

$$\text{So, } \left(a + \frac{3}{10}\right) = 60 \times \frac{51}{60 \times 60}$$

{distance = speed × time}

$$a + \frac{3}{10} = \frac{51}{60}$$

$$a = \frac{51}{60} - \frac{3}{10}$$

$$a = \frac{33}{60} \text{ km} = 550 \text{ m}$$

Hence, option (a) is correct.

108. (a) Let y denotes variable expenses and x denotes total no. of student and k be fixed expense

$$\Rightarrow y \propto x$$

$$y = ax$$

$$\Rightarrow \frac{ax + k}{20} = 400 \quad \dots(1) [\text{Here } x = 20]$$

$$\text{and } \frac{ax + k}{40} = 300 \quad \dots(2) [\text{Here } x = 40]$$

On solving eq. (1) & (2)

$$a = 200 \text{ and } k = 4000$$

$$\text{So, total expenses} = 200x + 4000$$

When $x = 80$

$$\text{Total expense} = 16,000 + 4000 = 20,000$$

$$\text{Average expense} = \frac{20,000}{80} = \text{Rs. } 250$$

Hence, option (a) is correct.

109. (c) Let the diminished speed be x and let the number of wagon attached be n

$$x \propto \sqrt{n}$$

$$\Rightarrow \frac{x_1}{x_2} = \frac{\sqrt{n_1}}{\sqrt{n_2}}$$

With no rake the speed of train is 45 km/hr

With 9 wagons attached the speed become 30 km/hr

Reduction in speed = (45 - 30) km/hr = 15 km/hr = x_1

Reduction in speed when the train stops.

$$= (45 - 0) \text{ km/hr} = 45 \text{ km/hr} = x_2$$

$$\frac{x_1}{x_2} = \frac{\sqrt{n_1}}{\sqrt{n_2}} = \sqrt{\frac{9}{n_2}}$$

$$\frac{15}{45} = \sqrt{\frac{9}{n_2}}$$

$$n_2 = 81$$

That means when 81 wagons are in train the train stops completely. So, it can carry maximum 80 wagons.

Hence, option (c) is correct.

110. (d) Product of first 31 natural no. = $1 \times 2 \times 3 \times \dots \times 31 = 31!$
 $z = 31!$

$$x = 31! + 1$$

$x + 1 = 31! + 2$ which is divisible by 2 because 31! is divisible by 2

$x + 2 = 31! + 3$ which is divisible by 3 because 31! is divisible by 3

⋮

⋮

$x + 30 = 31! + 31$ which is divisible 31 because 31! is divisible by 31

Hence, option (d) is correct.

111. (d) From question

$$\frac{A}{B} = \frac{B}{C} = \frac{C}{D} = \frac{3}{4}$$

From above $C = 3/4 D$

$$\frac{B}{C} = \frac{3}{4} \Rightarrow B = \left(\frac{3}{4}\right)^2 D$$

$$\text{and } \frac{A}{B} = \frac{3}{4} \Rightarrow A = \left(\frac{3}{4}\right)^3 D$$

Put $D = 64$

Then, $A : B : C : D = 27 : 36 : 48 : 64$

So, share of C.

$$= \frac{48}{(27 + 36 + 48 + 64)} \times 1400 = 384$$

Hence, option (d) is correct.

112. (c) Quantity of 'metal 1' in 14 kg of alloy 'A'

$$= \frac{3}{7} \times 14 = 6 \text{ kg}$$

Quantity of 'metal 2' in 14 kg of alloy 'A'

$$= \frac{4}{7} \times 14 = 8 \text{ kg}$$

Similarly,

$$\text{Quantity of 'metal 1' in alloy 'B'} = \frac{5}{13} \times 26 = 10$$

$$\text{Quantity of 'metal 2' in alloy 'B'} = \frac{8}{13} \times 26 = 16$$

$$\therefore \text{Ratio of 'metal 1' and 'metal 2'} = \frac{6+10}{8+16} = \frac{16}{24} = \frac{2}{3}$$

113. (b) Let the total profit at the end of the year be A .
For managing business Shyam gets 20% of total profit

$$\text{i.e., } \frac{20}{100} \times A = 0.2A$$

$$\text{The remaining profit} = A - 0.2A \\ = 0.8A$$

$$\text{Ratio of profit} = \text{Ratio of capitals investors} \\ = 4000 : 8000 : 6000 \\ = 2 : 4 : 3$$

Point $8A$ is divided among the 3 in the ratio $2 : 4 : 3$.

Also given that the profit of Shyam is ₹ 2200 less than the sum of the profit of Gopal and Madhur.

$$\Rightarrow \frac{7}{9} (0.8A) - \left[\frac{2}{9} (0.8A) + 0.2A \right] = 2200$$

$$\Rightarrow A = 9000.$$

$$\therefore \text{Mathur's share} = 0.8 \times \frac{9000}{3} = ₹ 2400.$$

114. (d) Pawan receives Rs 1800 half yearly as pension after the age of 60 years to 70 years (i.e. 10 years).

Hence number of installments of pensions
 $= (70 - 60) \times 2 = 20$

Hence present value

$$= \frac{1800}{1 + \frac{3}{100}} + \frac{1800}{\left(1 + \frac{3}{100}\right)^2} + \dots + \frac{1800}{\left(1 + \frac{3}{100}\right)^{20}}$$

$$= \frac{1800}{1.03} + \frac{1800}{(1.03)^2} + \dots + \frac{1800}{(1.03)^{20}}$$

$$= \frac{1800}{1.03} \left[\frac{1 - \frac{1}{(1.03)^{20}}}{1 - \frac{1}{1.03}} \right] = 26782.80$$

115. (d) Let required quantity of first variety x kg.

$$\therefore \text{Total cost price} = \text{Rs } (42x + 25 \times 25)$$

$$\text{Total S.P.} = \text{Rs } 40(x + 25)$$

$$\text{Gain\%} = \frac{\text{Profit}}{\text{C.P.}} \times 100$$

$$\Rightarrow \text{Gain\%} = \frac{\text{S.P.} - \text{C.P.}}{\text{C.P.}} \times 100$$

$$\Rightarrow 25 = \frac{40(x + 25) - (42x + 25 \times 25)}{42x + 25 \times 25} \times 100$$

$$\Rightarrow \frac{1}{4} = \frac{40x + 1000 - 42x - 625}{42x + 625}$$

$$\Rightarrow \frac{1}{4} = \frac{375 - 2x}{42x + 625}$$

$$\Rightarrow 42x + 625 = 1500 - 8x$$

$$\Rightarrow 50x = 875$$

$$\therefore x = \frac{875}{50} = \frac{35}{2} = 17.5$$

116. (b) Let Swati and Rajani's capitals are $5x$ and $6x$ respectively and Rajani's capital was used for y months.

According to the question,

$$\frac{5x \times 8}{6x \times y} = \frac{5}{9} \therefore y = \frac{5 \times 8 \times 9}{5 \times 6} = 12 \text{ months}$$

117. (a) Let the rate of flow of river is x km/h

According to question,

$$\frac{91}{10 + x} + \frac{91}{10 - x} = 20$$

$$\Rightarrow \frac{91(10 - x) + 91(x + 1)}{100 - x^2} = 20$$

$$\Rightarrow x = 3 \text{ km/h}$$

118. (b) $A = \sin^2 \theta + \cos^4 \theta$

$$\text{Let } \sin^2 \theta = x$$

$$A = \sin^2 \theta + (1 - \sin^2 \theta)^2$$

$$= x + (1 - x)^2$$

$$= x + 1 + x^2 - 2x = x^2 - x + 1$$

For all possible value of θ

$$-1 \leq \sin \theta \leq 1$$

$$\Rightarrow 0 \leq \sin^2 \theta \leq 1$$

$$\Rightarrow 0 \leq x \leq 1$$

$$\Rightarrow \frac{3}{4} \leq x^2 - x + 1 \leq 1$$

The value of $x^2 - x + 1$ is minimum if $x = \frac{1}{2}$

119. (d) Suppose husband's age be H years.
Then wife's age $W = H - 9$

$$\text{Son's age } S = \frac{H-9}{2}$$

$$\text{Daughter's age } D = \frac{H}{3}$$

According to question,

$$\frac{H}{3} + 7 = \frac{H-9}{2} \Rightarrow 2H + 42 = 3H - 27$$

$$\Rightarrow H = 42 + 27 = 69$$

$$\therefore W = 60.$$

But conventional method like this will take time to solve the problem. Easier way is to solve through options. For example take the middle option. Selecting middle option is best strategy as it indicates towards possible answer. Moreover, a closer look reveals that $40+9$ is not divisible by 3 and same is applicable for $50+9$. Divisibility by 3 is desirable as husband's age is 3 times that of the daughter. This leaves options (c) and (d).

Solving through option (c).

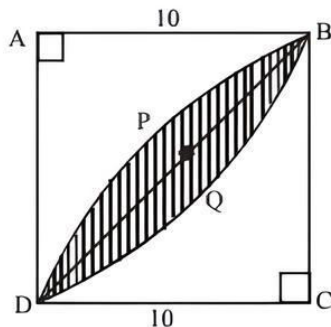
$$45+9 = 54H$$

$$\begin{array}{l} D = 18 \\ S = 22.5 \end{array} \rightarrow \text{Difference is 4.5 years, so this is incorrect.}$$

Solving through option (d) matches all conditions.

120. (c) Area of section $BQDAB = \text{Area of the sector } BPDCB$

$$\frac{1}{4}\pi r^2 = \frac{1}{4}\pi(10)^2 = 25\pi \text{ cm}^2$$



$$\text{Area of } \triangle ABD = \frac{1}{2} \times 10 \times 10 = 50 \text{ cm}^2$$

$$\text{Area of the shaded portion below the diagonal } BD = (25\pi - 50) \text{ cm}^2$$

$$\text{Area of the total shaded portion} = 2(25\pi - 50) = (50\pi - 100) \text{ cm}^2$$

121. (d) $\therefore \text{Amount} = P \left(1 + \frac{R}{100}\right)^n$

$$(I) \Rightarrow \text{For } P = 1000 \text{ and } n = 1, A = \text{Rs } 1100$$

$$\therefore R = 10\%$$

Hence, C.I. after 3 years can be calculated.

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

Now, since difference between S.I. and C.I. for 2

$$\text{years} = P \times \left(\frac{R}{100}\right)^2$$

\therefore From (II), R can be calculated.

Hence, C.I. after 3 years can be determined.

Therefore, each statement alone is sufficient to answer the question.

122. (c) (I) \Rightarrow Other tank empty in $2(8 + 8 + 8)$ hours = 48 hours

$$(II) \Rightarrow \text{Volume of original tank} = \frac{1}{3} (\text{volume of other tank})$$

$$\Rightarrow \text{Original tank empty in 16 hours}$$

$$\Rightarrow \text{Required number of hours can be calculated.}$$

123. (d) (I) \Rightarrow Total salary of 30 assembly workers
 $T_s = \text{Total salary} - \text{salary of foreman}$

$$\text{and required average} = \frac{T_s}{30}$$

$$(II) \Rightarrow \text{Foreman's salary} = 12,000 = 120\% \text{ of average salary of assembly workers}$$

$$\Rightarrow \text{Average salary} = \frac{12,000 \times 100}{120}$$

Hence, each statement alone is sufficient to answer the question.

124. (a) (I) $\Rightarrow 3x + 4x(0.50) + 5x(0.25) = 500$
 $\Rightarrow 6.25x = 500 \Rightarrow x = 80$

$$\therefore \text{The total number of 50-paise coins} = 4x = 320$$

But we can't be solved the question using statement (II).

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

125. (d) Given: $V_1 + V_2 = \frac{80+100}{36} = 5 \text{ m/s}$

$$(I) \Rightarrow V_1 = \frac{80}{60} = \frac{4}{3} \text{ m/s}$$

$$\therefore V_2 = 5 - \frac{4}{3} = \frac{11}{3} \text{ m/s}$$

$$\therefore \text{Required time} = \frac{80+100}{\frac{11}{3} - \frac{4}{3}} \text{ m/s}$$

$$(II) \Rightarrow V_2 = \frac{120+100}{60} = \frac{11}{3} \text{ m/s}$$

$$\text{Now, } V_1 = 5 - \frac{11}{3} = \frac{4}{3} \text{ m/s}$$

Hence, required time can be calculated.

∴ each statement alone is sufficient to answer the question.

126. (c)

Year	Cement	Limestone	Power	Wages
2006-07	100	20	25	15
2015-16	104	21	27	15.8

$$\begin{aligned} \text{Hence, \% profit} &= \frac{104 - (21 + 27 + 15.8)}{104} \times 100 \\ &= \frac{40.2}{104} \times 100 = 38.7\% \end{aligned}$$

127. (b)

Year	Cement	Limestone	Power	Wages
2006-07	100	30	10	25
2015-16	105.5	32.4	10.53	26.5

Hence,

$$\begin{aligned} \text{profit \%} &= \frac{105.5 - (32.4 + 10.53 + 26.5)}{105.5} \times 100 \\ &= 33.71\% \end{aligned}$$

Thus operating profit (%) of an average steel manufacturer in 2015-16 is less than that of cement manufacturer.

128. (a) To answer this question, we have to see only the particular row in the table for the given options and for power it experienced continuous rise.
129. (d) Again for Timber and Wages experienced decline only once for the given period.
130. (d) 7 km is a figure which is fulfilling both people's statements.
131. (b) Suppose Giridhar invested ₹ x in company A.

$$\therefore \frac{x \times 14}{100} + \frac{(25000 - x) \times 13}{100} = 3340$$

$$\text{or, } \frac{14x}{100} + 3250 - \frac{13x}{100} = 3340$$

$$\text{or, } \frac{x}{100} = 90 \quad \text{or, } x = ₹ 9000.$$

132. (a) Amount of dividend received by Anuja in 2011 from company B

$$= \frac{35000 \times 19}{100} = ₹ 6650$$

Total amount invested by Anuja in 2012 in Company A = 35000 + 6650 = ₹ 41650

$$\text{Reqd amount} = 41650 \times \frac{120}{100} = ₹ 49980$$

$$133. (b) \text{ Total dividend} = 18000 \times \left(\frac{20}{100} + \frac{15}{100} \right) = ₹ 6300$$

$$134. (c) \text{ Reqd ratio} = \frac{5 \times 12}{8 \times 10} = 3 : 4$$

135. (d) From the graph it is obvious that Suraj will get less dividend in 2014 from company A than from B.

$$\text{Reqd less amount} = 3\% \text{ of } 56000 = ₹ 1680.$$

Sol. (136-140):

Checking the visibility of given brands across the stores:

$$1. \text{ Astute : } \frac{111}{450} + \frac{48}{440} + \frac{91}{280} + \frac{30}{350} + \frac{80}{480} = 0.94 \text{ (approx.)}$$

$$2. \text{ Supreme : } \frac{128}{450} + \frac{55}{440} + \frac{79}{280} + \frac{111}{350} + \frac{65}{480} = 1.13 \text{ (approx.)}$$

$$3. \text{ Paramount : } \frac{69}{450} + \frac{116}{440} + \frac{50}{280} + \frac{101}{350} + \frac{105}{480} = 1.1 \text{ (approx.)}$$

$$4. \text{ Smash : } \frac{85}{450} + \frac{137}{440} + \frac{30}{280} + \frac{60}{350} + \frac{108}{480} = 1.06 \text{ (approx.)}$$

$$5. \text{ Ultimate : } \frac{57}{450} + \frac{84}{440} + \frac{30}{280} + \frac{48}{350} + \frac{122}{480} = 0.82 \text{ (approx.)}$$

136. (b) Hence, brand Supreme has the highest visibility.

137. (d) Hence, brand Ultimate has the lowest visibility.

138. (a) Total T-shirts owned by T-Nation = 2000.

$$\text{So, total T-shirts of size M} = \frac{22}{100} \times 2000 = 440$$

Total T-shirts of size M in stores 1, 2 & 5 = 10% of 1370 = 137. Hence, the remaining T-shirts of size M = 440 - 137 = 303.

Now, since we want to minimize size M in store 4, so we maximize size M in store 3 which can be 280 only. Hence remaining will be in store 4 = 303 - 280 = 23

139. (b) Total T-shirts of Supreme brand in all the stores = 128 + 55 + 79 + 111 + 65 = 438

Percentage share of supreme brand

$$= \frac{438}{2000} \times 100 = 21.9\% \approx 22\%$$

140. (d) Total Smash T-shirts = 420

Total Ultimate T-shirts = 341

Required percentage

$$= \frac{(420 - 341)}{341} \times 100 = 23.16\% \approx 23\%$$

Sol. (141-145):

	C.P.	S.P.	M.P.	Profit	Discount
T.V.	$36000 \times \frac{100}{120} = 30000$	36000	$24000 \times \frac{100}{40} = 60000$	6000	24000
A.C.	$50000 \times \frac{100}{120} = \frac{125000}{3}$	$30000 \times \frac{100}{60} = 50000$	$50000 \times \frac{100}{80} = 62500$	$\frac{25000}{3}$	12500
COOLER	$15000 \times \frac{100}{110} = \frac{150000}{11}$	$30000 \times \frac{50}{100} = 15000$	$15000 \times \frac{100}{80} = 18750$	$\frac{15000}{11}$	3750
LAPTOP	$75000 \times \frac{100}{120} = 62500$	$50000 \times \frac{150}{100} = 75000$	$75000 \times \frac{100}{70} = \frac{750000}{7}$	12500	$\frac{225000}{7}$
MOBILE	$31250 \times \frac{100}{150} = \frac{62500}{3}$	$\frac{62500}{2} = 31250$	$31250 \times \frac{100}{75} = \frac{125000}{3}$	$\frac{31250}{3}$	$\frac{31250}{3}$

141. (b) $X = \left(\frac{125000}{3} + \frac{62500}{3} \right) \div 2 = 31250$

$Y = 62500$

Hence, $X < Y$

142. (b) $X = \frac{6000 + \frac{25000}{3} + \frac{15000}{11} + 12500 + \frac{31250}{3}}{5}$

$= \frac{38613.6}{5}$

$Y = \frac{24000 + 12500 + 3750 + \frac{22500}{7} + \frac{31250}{3}}{5}$

$= \frac{82809.5}{5}$

Hence, $X < Y$

143. (b) $X = \frac{150000}{11}$

$Y = \frac{225000}{7}$

Hence, $X < Y$

144. (c) $X = \frac{31250}{3}$

$Y = \frac{31250}{3}$

Hence, $X = Y$

145. (a) $X = \frac{750000}{7}$

$Y = 62500$

Hence, $X > Y$

146. (b) Reqd difference

$= 24 \times 10^5 \times 16\% \times \frac{7}{12} - 32 \times 10^5 \times 15\% \times \frac{7}{16}$

$= 224000 - 210000 = 14000$

147. (a) Reqd % $\frac{\frac{4}{9} \times 18\% \times 24}{32} \times 100 = 8\%$

148. (d) Reqd % $\frac{14\% \text{ of } 24}{15\% \text{ of } 32} \times 100 = 70\%$

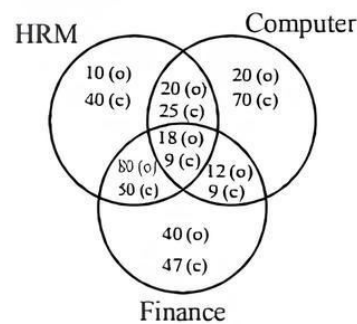
149. (c) Reqd ratio

$A \rightarrow \frac{(\text{graduate} + \text{XII}) \text{ male}}{(\text{graduate} + \text{XII}) \text{ female}}$

$\frac{24 \times 16\% \times \frac{7}{12} + 32 \times 15\% \times \frac{7}{16}}{24 \times 16\% \times \frac{5}{12} + 32 \times 15\% \times \frac{9}{16}} = 217 : 215$

150. (a) Reqd ratio = $24 \times 17 : 32 \times 12 \Rightarrow 17 : 16$

Sol. (151-155):



Total employees = 450

Total officers (o) = 200

Total clerks (c) = 250

151. (b) Required number of officers = $10 + 80 + 20 + 18 = 128$

152. (d) Required number of clerks = $70 + 9 = 79$

153. (a) Required number of employees = $40 + 47 + 12 + 9 = 108$

154. (a) Required number of clerks
 $= 47 + 9 + 9 + 50 = 115$
155. (c) Required percentage $= \frac{40}{200} \times 100 = 20\%$
156. (b) No of girls in T $= \left(12 \times \frac{90000}{100} \right) - 7200 = 10800 - 7200 = 3600$
 Total no of students in Q $= 13 \times 90000 / 100 = 11700$
 $\% = 3600 \times \frac{100}{11700} = 30.77\% = 31\%$
157. (a) $\frac{6500 + 8900 + 5500 + 9100 + 7200 + 8000}{6}$
 $= \frac{45200}{6} \approx 7533$
158. (d) Total no. of students in R
 $= \frac{22 \times 90000}{100} = 19800$
 No. of girls in P $= \frac{(18 \times 90000)}{100} - 6500 = 9700$
 Difference $= 19800 - 9700 = 10100$
159. (d) Boys in U $= 8000$
 Girls in S $= (16 \times 90000 / 100) - 9100 = 5300$
 80:53
160. (b) $P = 18 \times \frac{90000}{100} = 16200$
 $R = 22 \times \frac{90000}{100} = 19800$
 $T = 12 \times \frac{90000}{100} = 10800$
 Total $= 46,800$
161. (b) Project Loon is a Google project involving sending hot air balloons to the stratosphere in order to deliver Wi-Fi access to rural and underserved areas. Project Loon started in 2011 after much discussion and a delayed plan in 2008. The first balloons flew over areas of California.
162. (d) The Organization of the Petroleum Exporting Countries (OPEC) is an intergovernmental organization of 14 nations. It was founded in 1960 in Baghdad. OPEC is a permanent intergovernmental organization of 14 oil-exporting developing nations that coordinates and unifies the petroleum policies of its Member Countries. The current OPEC members are the following: Algeria, Angola, Ecuador, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, the Republic of the Congo, Saudi Arabia (the de facto leader), United Arab Emirates, and Venezuela.
163. (b) 164. (b) 165. (c) 166. (d)
167. (d) Pench Tiger Reserve is located in the Madhya Pradesh and covers a total area of 758 sq. km. It derives its name from its life line-the River Pench. The Reserve lies in the southern lower reaches of the Satpura Range of hills on the southern border of Madhya Pradesh.
168. (b) 169. (d)
170. (a) First World War or Great War, an international conflict that in 1914-18 embroiled most of the nations of Europe along with Russia, the United States, the Middle East, and other regions. The first world war began in August 1914. The war was virtually unprecedented in the slaughter, carnage, and destruction it caused.
171. (a) Jhansi Ki Rani is a 1953 Hindi historical drama film produced and directed by Sohrab Modi. It is credited as the first Technicolor film made in India. The film was dubbed in English as The Tiger and the Flame, which released in 1956.
172. (d)
173. (d) The Indian Council of Agricultural Research (ICAR) is an autonomous body responsible for co-ordinating agricultural education and research in India. ICAR's headquarters is in New Delhi. It was established on 16 July 1929 as a registered society under the Societies Registration Act, 1860.
174. (c) 175. (d)
176. (b) Corporation tax is a tax imposed on the net income of the company. It is taxed at a specific rate as prescribed by the income tax act subject to the changes in the rates every year by the IT department. Domestic as well as foreign companies are liable to pay corporate tax under the Income-tax Act. It is a direct tax.
177. (a) Article 17 of the Indian constitution abolishes the practice of untouchability. Practice of untouchability is an offence and anyone doing so is punishable by law. The Untouchability Offences Act of 1955 provided penalties for preventing a person from entering a place of worship or from taking water from a tank or well.
178. (d) Situational poverty is a period wherein an individual falls below the poverty line because of a sudden event. Situational poverty can be caused by a range of factors, such as: a divorce, death of the family head, illness, a natural disaster or loss of job.
179. (d)
180. (b) 'India Pharma & India Medical Device 2018': Affordable and Quality Healthcare is held in Bengaluru, Karnataka. It is organized by Department of Pharmaceuticals (DoP), Ministry of Chemicals and Fertilizers and Federation of Indian Chambers of Commerce & Industry (FICCI). The theme for 'India Pharma & India Medical Device 2018' is: 'Driving NextGen Pharmaceuticals'.
181. (d)

182. (b) Maharashtra Government has banned use of plastic in time-bound manner, citing environmental and public health concerns. The decision was taken at cabinet meeting led by Chief Minister Devendra Fadnavis.
183. (d)
184. (a) A two-day coastal security exercise 'Sagar Kavach' began on April 24, 2018 along Kerala shores. Exercise 'Sagar Kavach' is being conducted to strengthen and assess the loopholes in the coastal security mechanism along Kerala shores.
185. (c) The Objective of the Collaborations is to Introduce technology to provide perspective to farmers to improve the Productivity of Crops, Soil Yields, Improving the Farmers Incomes. And the Project is Implemented by Using Artificial Intelligence by which Farmers get to know about the Climate Change, Crop Monitoring and Early Warning on Pest & Disease Outbreak.
186. (a)
187. (c) Indian cricketer Yuvraj Singh has been honoured with the 'Most inspiring icon of the year for Social Welfare' award by the Dadasaheb Phalke International Film Festival (DPIFF) for his exemplary contribution in the field of social welfare. Yuvraj, who was a member of India's 2011 World Cup winning squad, was diagnosed with cancer (mediastinal seminoma) shortly after the World Cup.
188. (c) On May 29, 2018, Government of India announced that Defence Secretary Sanjay Mitra has been given Additional charge of DRDO. The current DRDO chief is S. Christopher and will retire after the extended one year tenure in 2018.
189. (b) Nima Jangmu Sherpa (28 year old) made her ascent on Mt Kanchenjunga, which is the third highest peak of the world. She has become the only woman in the world to climb three highest peaks in Nepal above 8,000 meters in one season within 25 days.
190. (a) Ayushman Bharat Yojana is a centrally sponsored scheme launched in 2018, under the Ayushman Bharat Mission. The scheme aims at making interventions in primary, secondary and tertiary care systems, covering both preventive and promotive health, to address healthcare holistically.
191. (b) 192. (c)
193. (a) BharatQR is an integrated payment system in India, which was launched in September 2016. The money transferred through BharatQR is received directly in the user's linked bank account. It provides a common interface for American Express, Visa, Mastercard, and RuPay cards.
194. (b) According to the law of diminishing marginal utility, as the amount of a good consumed increases, the marginal utility of that good tends to diminish.
195. (c) 196. (d)
197. (a) The Scientific study of the movement, distribution and quality of water on earth, including water resources and environmental watershed sustainability is known as hydrology.
198. (d) The Nag missile is an Indian third generation "fire-and-forget" anti-tank guided missile. It is an all weather, top attack missile with a range of 3 to 7 km. It is being developed by India's DRDO under the Integrated Guided Missile Development Program.
199. (c)
200. (d) The Securities and Exchange Board of India (SEBI) is the regulator for the securities market in India. It was established in 1988 and given statutory powers on 30 January 1992 through the SEBI Act, 1992.