



SHAKTHII ACADEMY

Increasing Confidence ; Reaching Goals

IBPS SO Model Paper 14.2.16

Q1. If '2' is added to each odd digit and '1' is subtracted from each even digit in the number '2368547', which of the following numbers will appear twice in the new number thus formed ?

- (1) None
- (2) Both 3 and 5
- (3) Only 1
- (4) Both 5 and 7
- (5) Only 2

\$\$\$ (2-6): Study the following information to answer the given questions.

Eight friends L, M, N, O, P, Q, R and S are sitting around a square table in such a way that four of them sit at four corners while four sit in the middle of each of the four sides. The ones who sit in the middle of the Sides face the centre while those who sit at the four corners face outside (i.e. opposite to the centre.)

R sits third to the right of P. P sits on one of the corners of the table. Only one person sits between O and R. M is one of the immediate neighbours of O. N sits second to the right of M. Only three people sit between M and L. S sits to the immediate right of L.

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Q2. What is the position of N with respect to L?

- (1) Second to the right
- (2) Third to the right
- (3) Third to the left
- (4) Second to the left
- (5) Fifth to the right

Q3. Which of the following statement is true with respect to R ?

- (1) Either two or four persons sit between R and S.
- (2) Q sits second to the right of R.
- (3) L sits third to the left of R.
- (4) R is immediate neighbour of N and Q.
- (5) None of the given options is true.

Q4. How many people sit between R and S when counted from the right of R?

- (1) Two
- (2) Four
- (3) None
- (4) Three
- (5) One



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Q5. Who sits second to the left of O ?

- (1) L
- (2) N
- (3) P
- (4) R
- (5) S

Q6. Four of the following five are alike in a certain way and so form a group. Which is the one that does not belong to that group ?

- (1) S
- (2) Q
- (3) O
- (4) R
- (5) M

\$\$\$ (7-11): In these questions, two/three statements followed by two conclusions numbered I and II have been given. You have to take the given statements to be true even if they seem to be at variance from commonly known facts. Read all the conclusions and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

Give answer:

- (1) If **only** conclusion **I** is true
- (2) If **either** conclusion **I or II** is true
- (3) If **only** conclusion **II** is true
- (4) If **neither** conclusion **I nor II** is true
- (5) If **both** conclusions **I and II** are true

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Q7. **Statements :** All fares are prices. Some prices are costs. All costs are tariffs.

Conclusions : I. No fare is a tariff. II. No cost is a fare.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q8. **Statements:** No proof is an evidence. No proof is an indication.

Conclusions : I. All indications being evidences is a possibility. II. No evidence is an indication.

- (1) 1



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- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q9. **Statements :** All fares are prices. Some prices are costs. All costs are tariffs.

Conclusions : I. Atleast some prices are tariffs. II. All tariffs being prices is a possibility.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q10. **Statements:** Some tests are exams. No exam is a challenge. Some challenges are wins.

Conclusions : I. No test is a win. II. Atleast some tests are wins.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q11. **Statements:** Some tests are exams. No exam is a challenge. Some challenges are wins.

Conclusions: I. All tests can never be challenges. II. No win is an exam.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

\$\$\$ (12-13): Each of the questions below consists of a question and two statements numbered I and II are 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:

- (1) The data **either** in statement I alone **or** statement II alone are sufficient to answer the question.
- (2) The data in **both** statements I and II are necessary to answer the question.
- (3) The data in statement **I alone** are sufficient to answer the question while the data in statement II are not sufficient to answer the question.



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(4) The data in statement **II alone** are sufficient to answer the question while the data in statement I are not sufficient to answer the question.

(5) The data in **both** statements I and II together are **not** sufficient to answer the question.
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Q12. How many people are standing in a straight line (Note: All are facing north) ?

I. J stands third from the right end of the line. Q stands to the immediate left of J. Only two people stand between Q and T. No person stands to the left of T.

II. R stands third from the left end of the line. Q is one of the immediate neighbours of R. Only two people stand between Q and S.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q13. How far is Point X from Point J ?

I. Point Q is 2.5m to the west of Point J. Point P is 2.5m to the south of Point Q. Point X is to the east of Point F such that Point F is the midpoint of a 5m line formed by joining points M and X.

II. Point R is 5m to the south of Point Q. Point Z is to the east of Point R. Point X is 2.5m to the north of Point Z. Point J is 2.5m to the east of Point Q.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

\$\$\$ (14-18): Study the following information to answer the given questions.

Twelve people are sitting in two parallel rows containing six people each in such a way that there is an equal distance between adjacent persons. In row-1, M, N, O, P, Q and R are seated (but not necessarily in the same order) and all of them are facing south. In row-2, A, B, C, D, E and F are seated (but not necessarily in the same order) and all of them are facing north. Therefore, in the given seating arrangement, each member seated in a row faces another member of the other row.

B faces one who sits third to the right of Q. Only three people sit between Q and N. R is neither an immediate neighbour of N nor Q. One of the immediate neighbours of R faces F. Only three people sit between F and the one who faces O. A sits second to the left of the one facing M. C is not an immediate neighbour of B. N does not face E.

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Q14. Which of the following is true with respect to the given information ?



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- (1) D faces N
- (2) M faces one of the immediate neighbours of F
- (3) F sits exactly between A and D
- (4) None of the given options is true
- (5) O is an immediate neighbour of R

Q15. Who amongst the following sits second to the right of the person who faces B ?

- (1) M
- (2) O
- (3) R
- (4) N
- (5) P

Q16. Which of the following groups of people represents the people sitting at extreme ends of both the rows ?

- (1) M, Q, C, F
- (2) P, R, D, E
- (3) N, R, E, F
- (4) O, Q, A, C
- (5) C, P, A, C

Q17. Four of the following five are same as per the given arrangement and so form a group. Which of the following does not belong to that group?

- (1) AD
- (2) RM
- (3) PQ
- (4) BE
- (5) CF

E18. Who amongst the following faces E ?

- (1) Q
- (2) R
- (3) O
- (4) M
- (5) P

Q19. This question consists of an information and two statements numbered I and II given below it. You have to decide which of the given statements weaken (s) or strengthen(s) the given information and decide the appropriate answer.

Information : Examination committee of college X has recommended that the negative marking in the exam should be removed.

I. The students tend to give answers simply by guessing when there is no negative marking in the exam.



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II. Selecting the best candidates from the population becomes difficult in the absence of negative marking.

- (1) Both Statement I and Statement II weaken the information.
- (2) Statement I strengthens the information while Statement II weakens the information.
- (3) Statement I weakens the information while Statement II strengthens the information.
- (4) Both Statement I and Statement II are neutral statements.
- (5) Both Statement I and Statement II strengthen the information.

Q20. Study the following information to answer the given question.

'Ever since we started involving our employees in the key decision making process from fee last year, the productivity of our employees has been 100% - statement by HR manager of company D.

Which of the following statements can be inferred from the given statement? (An inference is something by which by which you can logically deduce something to be true based on known premises.)

- (1) Employees of Company D will always take correct decisions in all the situations
- (2) Company D completely relies on its employees for all key decisions.
- (3) The productivity of employees of Company D has always been satisfactory in the past.
- (4) Involving employees at decision making process is an effective method to — motivate them.
- (5) Employees of company D have now become competent enough to give valuable suggestions.

Q21. Study the following information to answer the given question.

Carmakers Kellbahn's domestic sales have surged as they have reported sales of 12000 cars this December. This number is more than double the number of cars sold by them in the third quarter (October-December) put together last year.

Which of the following can be concluded from the given statement ?

- (1) If 6000 more cars were sold in the third quarter of last year, the two numbers would have become equal.
- (2) Kellbahn definitely sold less than 6000 cars in December last year.
- (3) Addition of International sales figures would have made performance of last quarter better,
- (4) If 6000 less cars were sold in December this year, the number of cars sold would have been same as that in December last year.
- (5) Kellbahn definitely sold less than 12000 cars in November this year.

Q22. Study the following information to answer the given question.

'Kalikaar' is a famous fabric threadwork that originated in city G of a country. 'Kalikaar' was an innovation of 'Hardali' tribe of City G. Though the tribe lost its existence long ago, 'Kalikaar' is still very much in demand. Only the authentic 'Kalikaar' depicts fruits and flowers of a specific tree that was worshipped by 'Hardali' tribe.

Which of the following can be inferred from the given information ?

(Note: An inference is something by which you can logically deduce something to be true based on known premises.)

- (1) The 'Hardali' tribe did not worship Gods and Goddesses.



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- (2) Some people not belonging to the tribe have taken the 'Kalikaar' work forward and managed to keep fulfilling its demand,
- (3) 'During the existence of 'Hardali' tribe, 'Kalikaar' was the only means of their income.
- (4) No city other than city G sells authentic cloth materials of 'Kalikaar' threadwork.
- (5) Since not many people belonged to the 'Hardali' tribe, others came to know about the tribe only through its innovation of 'Kalikaar'.

\$\$\$ (23-28) : Study the following information to answer the given questions.

Seven friends namely P, Q, R, S, T, U and V visit seven different cities namely, Berlin, Kabul, Jakarta, Madrid, Chicago, Miami and Sydney, not necessarily in the same order, starting from Monday to Sunday (of the same week.) Q visits a city on Wednesday. Only one person visits between Q and the one who visits Madrid. T visits immediately after the one who visits Madrid. Only four people visit between T and the one who visits Sydney. Only one person visits between the one who visits Sydney and R. The one who visits Berlin visits immediately before R. The one who visits Chicago visits on one of the days before the one who visits Berlin but not on Wednesday. More than three people visit between the one who visits Chicago and P. Only two people visit between S and the one who visits Miami. Only two people visit between the one who visits Miami and the one who visits Jakarta. V does not visit Berlin.

\$\$\$

Q23. On which of the following days does S visit a city ?

- (1) Sunday
- (2) Thursday
- (3) Tuesday
- (4) Saturday
- (5) Friday

Q24. As per the given arrangement R is related to the one who visits Jakarta in a certain way and T is related to the one who visits Miami in the same way. To which of the following is V related to in the same way ?

- (1) The one who visits Kabul
- (2) The one who visits Sydney
- (3) The one who visits Madrid
- (4) The one who visits Berlin
- (5) The one who visits Chicago

Q25. Which of the following cities does P visit ?

- (1) Berlin
- (2) Jakarta
- (3) Sydney
- (4) Madrid
- (5) Miami

Q26. Which of the following is true about U ?



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- (1) All the given statements are true.
- (2) U visits Berlin.
- (3) U visits a city on Saturday.
- (4) Only three people visit between U and Q.
- (5) U visits a city immediately before T.

Q27. Four of the following five are alike in a certain way and thus form a group as per the given arrangement. Which of the following does not belong to that group ?

- (1) T-Thursday
- (2) P-Sunday
- (3) Q-Wednesday
- (4) R-Friday
- (5) V-Monday

Q28. Who amongst the following visits Kabul ?

- (1) P
- (2) R
- (3) S
- (4) U
- (5) Q

\$\$\$ (29-33) : Study the following information to answer the given questions.

Eight people— P, Q, R, S, W, X, Y and Z live on eight different floors of a building but not necessarily in the same order. The lowermost floor of the building is numbered on the one above that is numbered two and so on till the topmost floor is numbered eight

P lives on an odd numbered floor below the floor numbered six. Y lives immediately above P. Only three people live between Y and W. There are as many people between W and R as are there between R and Y. Z lives on an odd numbered floor below Y but not on the floor numbered three. Only one person lives between Q and X. Q lives above X.

\$\$\$

Q29. Who amongst the following lives on the floor numbered three?

- (1) S
- (2) W
- (3) X
- (4) P
- (5) Q

Q30. As per the given arrangement, four of the following five are alike in a certain way, and so form a group. Which one of the following does not belong to the group ?

- (1) W- Five
- (2) Y- One
- (3) S -Three
- (4) Q - Four



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(5) X - Eight

Q31. Who amongst the following lives exactly between S and X ?

- (1) Only P
- (2) Only W
- (3) Both Z and R
- (4) No one
- (5) Both P and Y

Q32. If Q and Y interchange their places and so do W and S, then who will live between Q and W as per the new arrangement ?

- (1) P
- (2) X
- (3) R
- (4) S
- (5) Other than those given as options

Q33. On which of the following floor numbers does R live ?

- (1) Two
- (2) Six
- (3) Five
- (4) Seven
- (5) Three

\$\$\$ (34-38) : In these questions, relationship between different elements is shown in the statements. The statements are followed by conclusions. Study the conclusions based on the given statements and select the appropriate answer.

Give answer:

- (1) If **only** conclusion **I** is true
- (2) If **either** conclusion **I** or **II** is true
- (3) If **only** conclusion **II** is true
- (4) If **neither** conclusion **I** nor **II** is true
- (5) If **both** conclusions **I** and **II** are true

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Q34. **Statements :** $L \leq Q \leq R = S$; $R > H \geq P$

Conclusions : I. $P < S$ II. $L \leq P$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q35. **Statements :** $W \geq A = S \geq U < K$; $U \geq Y$

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Conclusions : I. $K > W$ II. $Y \leq W$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q36. Statements: $Y \leq U < W > S$; $M \geq W > D$

Conclusions : I. $Y < M$ II. $S < D$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q37. Statements : $S < P = Q < J$; $Q \leq Y$; $P \leq L$

Conclusions : I. $J > L$ II. $S < J$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q38. Statements : $S < P = Q < J$; $Q \leq Y$; $P \leq L$

Conclusions : I. $Y > S$ II. $S = Y$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

\$\$\$ (39-43) : Study the following information to answer the given questions.

When a word and number arrangement machine is given an input line of words and numbers, it rearranges them following a particular rule. The following is an illustration of input and rearrangement:

(All the numbers are two-digit numbers.)

Input : baffled 46 Iceberg 19 nation unreal 75 28 kidney 63 abandon 94

Step I : abandon baffled 46 iceberg 19 unreal 75 28 kidney 63 94 nation

Step II : iceberg abandon baffled 46 19 unreal 75 28 63 94 nation kidney

Step III : unreal iceberg abandon 46 19 75 28 63 94 nation kidney baffled

Step IV : 75 unreal iceberg abandon 46 19 63 94 nation kidney baffled 28

Step V : 63 75 unreal iceberg abandon 19 94 nation kidney baffled 28 46



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Step VI : 19 63 75 unreal iceberg abandon nation kidney baffled 28 46 94

Step VI is the last step of the above arrangement as the intended arrangement is obtained

As per the rules followed in the given steps, find out the appropriate steps for the given input.

Input: offense 71 vaccine 12 39 garage absorb 86 earlier 25 malign 64.

Q39. If in the step II, 'absorb' interchanges its position with '86' and '39' also interchanges its position with 'vaccine' then which element will be seventh to the left of '25' ?

- (1) 39
- (2) absorb
- (3) 86
- (4) 64
- (5) vaccine

Q40. Which of the following combinations represents the first two and the last two elements in the step IV of the given input ?

- (1) earlier, 86, vaccine, 71
- (2) 39, absorb, earlier, 12
- (3) offense, 25, 12, absorb
- (4) 25, malign, garage, 86
- (5) 71, offense, garage, 12

Q41. In which step are the elements 'absorb 86 25 vaccine' found in the same order ?

- (1) Third
- (2) Fourth
- (3) Fifth
- (4) Sixth
- (5) The given order of elements is not found in any step

Q42. Which elements come exactly between '25' and 'malign' in step III of the given input ?

- (1) Both "64" and 'vaccine'
- (2) Only '39'
- (3) Both '86' and 'earlier'
- (4) Only 'garage'
- (5) Only 'offense'

Q43. Which element is third to the left of the one which is seventh from the left end in Step VI of the given input ?

- (1) offense
- (2) 71
- (3) malign
- (4) earlier
- (5) 25

Q44. Study the following information to answer the given question.



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School M. which has always been among the winning schools in interschool sports competitions has sent only 5 participants for the interschool competitions to be held this year. More participants were expected from the school as last year out of its 19 participants 12 won gold medal while others won silver and bronze medals.

Which of the following may not be a reason for the decrease in number of participants for interschool sports competition from School M ?

- (1) Parents of students studying in school M are unwilling to send their children for the interschool sports competition this year.
- (2) Most coaches have resigned from school M this year as they got a much better offer from school D, and school M has not found a good replacement yet.
- (3) Most parents of students studying in school M were reluctant to send their children for interschool sports competition this year as the accommodations provided last year were substandard.
- (4) The sponsors of school M have reduced the funding of the school by half this year.
- (5) Two-third students, out of those who went to the interschool competition last year, either failed, or scored very low in the final exam and the school did not consider giving them grace marks based on sports performance.

\$\$\$ (45-49) : Study the following information to answer the given questions

In a certain code language,

"gloves are found there" is written as 'vg xa ze co'

'two pairs of gloves' is written as 'sh yc li xa'

"found two new friends" is written as 'wd vg nu sh'

'all packets are new' is written as 'om co nu qk'

(All codes are two letter codes only)

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Q45. What does the code 'ti' stand for in the given code language ?

- (1) Either 'two' or 'new'
- (2) are
- (3) gloves
- (4) Either 'of' or 'pairs'
- (5) two

Q46. What will be the code for 'found' in the given code language ?

- (1) ze
- (2) wd
- (3) sh
- (4) vg
- (5) yc

Q47. What is the code for 'are' in the given code language ?

- (1) co
- (2) ze



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- (3) qk
- (4) om
- (5) ti

Q48. What will be the possible code for 'new writer gloves' in the given code language ?

- (1) xa nu dy
- (2) xa dy vg
- (3) ze xa wd
- (4) ze sh om
- (5) nu ti xa

Q49. In the given code language, if "blue' is coded as 'af, then how will "all blue packets" be coded as ?

- (1) nu vg af
- (2) co qk om
- (3) af co nu
- (4) af om qk
- (5) om af co

Q50. How many such pairs of letters are there in the word 'SHARPLY', each of which has as many letters between them in the word (in both forward and backward directions), as there are between them in the English alphabetical series ?

- (1) None
- (2) One
- (3) Two
- (4) More than three
- (5) Three

\$\$\$ (51-55): These questions have two blanks, each blank indicating that something has been omitted. Choose the set of words for each blank that best fits the meaning of the sentence as a whole.

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Q51. Forensic experts have _____ samples from the spot to _____ whether there are any traces of explosives.

- (1) picked, ensure
- (2) left, verify
- (3) marked, gather
- (4) lifted, ascertain
- (5) released, detection

Q52. Researchers have _____ that increased body fat is _____ with greater sensitivity to sweet taste.

- (1) found, associated



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- (2) established, accounted
- (3) published, accumulate
- (4) written, secreted
- (5) segmented, amounted

Q53. The organisation _____ mid-day meals to _____ one million school children.

- (1) provides, over
- (2) supplies, equal
- (3) leaves, about
- (4) ascribes, limited
- (5) distributes, amount

Q54. _____ of the work on the new colleges will go a long way in _____ the shortage of engineers in the State.

- (1) Starting, requesting
- (2) Completion, addressing
- (3) Finishing, establishing
- (4) Absolution, overcoming
- (5) Surpassing, limiting

Q55. The actor is set to return to the big screen in a movie that _____ contrasting _____ of horror and comedy.

- (1) amalgamates, films
- (2) blends, genres
- (3) involve, issues
- (4) featuring, depictions
- (5) celebrates, visual

\$\$\$ (56-65): Read the following passage carefully and answer the questions. Certain words phrases are given in **bold** to help you locate them while answering some of the questions.

The Arctic is the canary in global-warming. Canaries expired in contact with gases such as carbon monoxide and methane, warning miners to leave the area. The Arctic sea is similarly sensitive to changes which might otherwise not be obvious as the Earth warms up in response to more of another gas, carbon dioxide. The area of Arctic Ocean covered by ice at the height of summer has been shrinking by 11% a decade for the past 35 years, But the details are obscure because gathering data in the Arctic Ocean is **hard**. But, a systematic approach to that gathering has begun. The Marginal Ice Zone (MIZ) programme, paid for by the United States Navy, has laid dozens of devices. These measure the thickness of the icy layer, and also the salinity, temperature, oxygen concentration, organic-matter composition and movement of the seawater beneath. With luck, the MIZ's researchers with their elaborate network of sensors and instrument-laden robots known as Seagliders will gather the largest quantity of data yet collected on the seasonal melting of the Arctic ice sheet and thus find out exactly what song the Arctic canary is singing.



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Monitoring sea ice is a **fairly** recent activity. It began seriously in the 1950s, from aboard nuclear submarines. Satellite monitoring started in 1979. Since then the summer sea ice has shrunk by 12% a decade. That is consistent with the trend predicted by climate-change models over the past three decades, an indication that their mathematical simulations of global warming are roughly right. Scientists have constructed a record of the Arctic past suggest that the summer sea ice is at its lowest level for at least 2000 years. Six of the hottest years on record- going back to 1880- have occurred since 2004. According to the Intergovernmental Panel on Climate Change (IPCC), the last time the polar regions were significantly warmer was about 1,25,000 years ago. This transformation is in fact happening faster than anyone had predicted. According to the scientists, the average thickness of the pack ice has fallen by roughly half since the 1970s, probably for two main reasons. In the summer of 2007, coastal parts of the Arctic Ocean rose to 7° C- bracingly swimmable. The other was a prolonged eastward shift in the early 1990s in the Arctic's prevailing winds, known as the Arctic Oscillation. This moved a lot of ice into the Atlantic and has not been replaced.

Attention has recently also been focused on lesser-known greenhouse gases, including ozone and methane, and on soot from diesel exhaust and forest fires. These are known as "short-lived climate forcers". Though they linger in the atmosphere for a relatively short time, they can have a powerful greenhouse effect. Soot, or black carbon, stays in the atmosphere for an average of six days, whereas carbon dioxide lasts for centuries, even millennia. Yet black carbon has an unusually potent warming effect in the snowy Arctic because the dark soot, after being rained or snowed onto bright snow or ice, continues to absorb heat. The UN's Environment programme estimates that reducing black carbon and methane emission could cut Arctic warming by two-thirds over the next three decades. That would not prevent the disappearance of the summer sea ice, but it might delay it by a decade or two.

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Q56. What do the statistics regarding the Arctic climate cited in the passage indicate ?

- (1) This year is the hottest in 1,25,000 years.
- (2) Of late temperatures have been rising.
- (3) Arctic temperatures have remained stable for about two decades.
- (4) The Arctic is heating up ten times more quickly than mathematicians predicted.
- (5) There is not much change in Arctic temperatures over the millennia.

Q57. What is the author's view regarding the MIZ's programme?

- (1) He is dissatisfied as it is funded by only one country and its findings are likely to be biased.
- (2) He wishes it to be successful as it will provide valuable information about climate change.
- (3) It is too costly a venture and these resources should be invested elsewhere.
- (4) It utilises cutting edge technology and will be very useful for military operations in the region.
- (5) Other than those given as options.

Q58. Which of the following can be said about short lived climate forcers ?

- (1) Their impact on the climate is very brief.
- (2) These are responsible for delaying the loss of Arctic ice.



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- (3) These are very harmful to the environment.
- (4) These have helped ensure relatively stable climate patterns.
- (5) These are responsible for delaying the process of Arctic Oscillation.

Q59. Choose the word which is most nearly the **same** in meaning to the word **FAIRLY** given in **bold** as used in the passage.

- (1) Honestly
- (2) Equally
- (3) Impartially
- (4) Quite
- (5) Favourably

Q60. Choose the word which is **opposite** in meaning to the word **HARD** given in **bold** as used in the passage.

- (1) Delicate
- (2) Undemanding
- (3) Sensitive
- (4) Flexible
- (5) Durable

Q61. What does the phrase 'The Arctic is the canary in global-warming' convey ?

- (1) The Arctic has a varied bird life yet to be discovered.
- (2) Global warming has been responsible for the extinction of canaries in the Arctic.
- (3) Warm temperatures have made it explore the Arctic.
- (4) Canaries surprisingly have proved very useful in exploring the Arctic.
- (5) The Arctic is sensitive to changes in climate.

Q62. Which of the following is **TRUE** in the context of the passage ?

- (1) The US has made efforts to study the Arctic.
- (2) International bodies are not taking interest in studying climate change.
- (3) Arctic ice is shifting not melting according to the latest scientific evidence.
- (4) Increased exploration in the Arctic is posing a danger to its marine life.
- (5) None of the given statements is true in the context of the passage.

Q63. Which of the following factor is/are (a) factor(s) which have impacted data gathering in the Arctic ?

- (A) High concentrations of carbon monoxide and methane.
 - (B) Conflicts among countries over exploratory rights.
 - (C) Lack of interest in the Arctic.
- (1) Only (A)
 - (2) Only (B)
 - (3) All (A), (B) and (C)
 - (4) Both (A) and (B)
 - (5) None of the given options (A), (B) and (C)



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Q64. What does the author suggest regarding monitoring of sea ice?

(A)/It is too time consuming and therefore of not much use. (B)/It provides an exaggerated picture of global warming and should be done away with. (C)/ It has provided insight into climate patterns both past and future.

- (1) Only (A)
- (2) Only (B)
- (3) Only (C)
- (4) All (A), (B) and (C)
- (5) None of the given options (A), (B) and (C)

Q65. Which of the following is the central idea of the passage?

- (1) Efforts to understand the Arctic are important as it is an indicator of global warming.
- (2) Scientists need to co-operate among themselves to better understand global warming.
- (3) The Arctic is proof the Climate change is a cycle that scientists are unnecessarily alarmed.
- (4) Warmer Arctic temperatures will provide scientists and explorers wonderful opportunities.
- (5) None of the above.

\$\$\$ (66-75): Which of the phrases given against the sentence should replace the word/phrase given in **bold** in the sentence to make e grammatically correct? If the sentence is correct as it is given and no correction is required, mark 'No correction required' as the answer.

\$\$\$

Q66. Astronomers determined that the planet **spin faster than** any other object in our solar system, with a rotational velocity of about 56000 miles per hour.

- (1) spins fast then
- (2) spinning faster then
- (3) spins taster than
- (4) spins faster than
- (5) No correction required

Q67. While following the leaders is hardly an innovative idea, there is **much to be learnt** from companies that excel at innovation management.

- (1) more to be learn
- (2) much to be learning
- (3) much learning
- (4) nothing to learning
- (5) No correction required

Q68. The latest device developed by IBM increases speed of the internet by 200 Gigabits per second at **very lowly power**.

- (1) every low power
- (2) very lower power
- (3) very low power



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- (4) powered very low
- (5) No correction required

Q69. China's economy grew at its lowest pace in a quarter of a century last year, **raised expectations** of a further devaluation of the Yuan.

- (1) rising expectation
- (2) raising expectations
- (3) expectations rose
- (4) expecting rise
- (5) No correction required

Q70. The fact that shopping is now happening across various channels is **only adds to the** complexity of the business.

- (1) only adding to
- (2) adding up to only
- (3) only adding up
- (4) just adds to
- (5) No correction required

Q71. As global growth slows down, people look towards innovation in technology to get it **back on track**.

- (1) backed on track
- (2) backup with tracks
- (3) tracking back
- (4) tracing back with
- (5) No correction required

Q72. We **operates in** business and societal environments that are complex, dynamic and uncertain.

- (1) operating on
- (2) operates on
- (3) operating for
- (4) operate in
- (5) No correction required

Q73. According to research, ethnically diverse teams **could been less** productive than more homogeneous teams.

- (1) can being least
- (2) could least
- (3) can be low
- (4) can be less
- (5) No correction required

Q74. '**What happening is** to the world of innovation these days?' asked the worried CEO.



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- (1) What is happening
- (2) What is happened
- (3) Where happening is
- (4) What are happening
- (5) No correction required

Q75. It is not very difficult **to dishing out** a simple recipe for your child's lunchbox.

- (1) for dishing about
- (2) to dish out
- (3) in order to dish
- (4) to out dish
- (5) No correction required

\$\$\$ (76-85) : In these questions, read the sentence to find out whether there is any grammatical error in it. The error, if any, will be in one part of the sentence. Mark the part with the error as your answer. If there is no error, mark 'No error' as your answer. (Ignore the errors of punctuation, if any)

\$\$\$

Q76. Children love sweets, but have you ever wondered why some children demands more sugary treats than others ?

- (1) Children love sweets
- (2) but have you ever wondered
- (3) why some children demands
- (4) more sugary treats than others
- (5) No error

Q77. The actor, who arrived on only ten minutes before the actress, left before the event ended.

- (1) The actor, who
- (2) arrived on only ten minutes
- (3) before the actress
- (4) left before the event ended
- (5) No error

Q78. It is a little lately to play 'Secret Santa' with your co-workers, but that is not to say that you cannot still give them a surprise gift and make their day.

- (1) It is a little lately to play 'Secret Santa'
- (2) with your co-workers, but that is not to say
- (3) that you cannot still give them a surprise gift
- (4) and make their day
- (5) No error

Q79. The- actor was photographed while dining at a five star restaurant and was quite annoyed on it.



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- (1) The actor was photographed
- (2) while dining at
- (3) a five star restaurant and was
- (4) quite annoyed on it
- (5) No error

Q80. Drinking herbal tea can help you Calm down during a stressful time.

- (1) Drinking herbal tea
- (2) can help you
- (3) calm down during
- (4) a stressful time
- (5) No error

Q81. The initial calls of emergency sent the police into a fizzy.

- (1) The initial calls
- (2) of emergency
- (3) sent the police
- (4) into a fizzy
- (5) No error

Q82. The Government sought an early release of funds to expediting the construction of five new medical colleges in the state.

- (1) The Government sought
- (2) an early release of funds
- (3) to expediting the construction of
- (4) five new medical colleges in the state
- (5) No error

Q83. Did the co-pilot of the ill-fate plane that crashed come in as a last minute replacement ?

- (1) Did the co-pilot of
- (2) the ill-fate plane
- (3) that crashed come in as
- (4) a last minute replacement
- (5) No error

Q84. Agitated teachers, surrounded the homes of some of the ministers, demanding regularisation of their jobs

- (1) Agitated teachers
- (2) surrounded the homes of
- (3) some of the ministers, demanding
- (4) regularisation of their jobs
- (5) No error

Q85. When the actor came to know that the director was shooting at the same studio, he



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dropped for a visit.

- (1) When the actor
- (2) came to know that
- (3) the director was shooting at the same studio
- (4) he dropped for a visit
- (5) No error

\$\$\$ (86-90): Read the following six sentences (A), (B), (C), (D), (E) and (F) in the proper sequence to form a meaningful paragraph then answer the questions.

(A) Between these two Asian countries, India is a significant contributor on account of both pre and post harvest waste in cereals, pulses, fruits and vegetables.

(B) India's lower overall ranking is because most of the countries ranking above it cause much of their land in raising poultry, while a major chunk of land in India is under agriculture.

(C) It said Asian countries, especially India and China, were the worst culprits causing loss of 1.3 billion tonnes of food every year.

(D) That is why the highest waste of cereals, pulses, fruits and vegetables occurs in India.

(E) In terms of overall food waste- agricultural produce, poultry and milk- India ranks seventh, with the Russian ' Federation at the top of the list.

(F) Globally, one-third of the food produced is wasted, costing the world economy about \$750 billion, a report said.

\$\$\$

Q86. Which of the following should be the **SECOND** sentence after the rearrangement ?

- (1) A
- (2) B
- (3) C
- (4) D
- (5) F

Q87. Which of the following should be the **FOURTH** sentence after the rearrangement ?

- (1) A
- (2) B
- (3) C
- (4) E
- (5) D

Q88. Which of the following should be the **FIRST** sentence after the rearrangement ?

- (1) A
- (2) B
- (3) C
- (4) D
- (5) F

Q89. Which of the following should be the **THIRD** sentence after the rearrangement ?



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- (1) A
- (2) B
- (3) F
- (4) D
- (5) E

Q90. Which of the following should be the **LAST (SIXTH)** sentence after the rearrangement ?

- (1) A
- (2) E
- (3) D
- (4) C
- (5) B

\$\$\$ (91-100): Read the following passage given below with blanks. You have to choose the correct option to fill-up the blanks.

As is well known, India made a major effort to cut. **...(91)...** red tape and "unshackle the tiger" a little over twenty years ago. The economy responded **... (92)...** and we have seen a healthy annual growth rate averaging close to 7 percent over this period. Companies active in the Indian market- **...(93)...** Indian or foreign- benefited from this growth as, to quote our Chinese neighbours, 'the rising tide lifted all boats.' However, while opportunities for growth still **...(94)...** some product categories are becoming saturated, or at least the most lucrative customers have already been **...(95)...** This is true in case of mobile services, for example, where penetration has already reached 70 percent. This means that to **...(96)...** growth and profitability, companies will have to look at new ways to excite customers. Ergo... innovation is on the corporate agenda. But the bigger reason d'etre for innovation is India's **...(97)...** social challenges. With the second-largest population in the world, the world's largest number of poor people, a literacy rate of only 70 percent, inadequate healthcare, and poor nutrition levels. India's economic and geopolitical aspirations will have meaning **...(98)...** if we can raise our performance on social indicators rapidly. Given the country's resource **...(99)...** and its poor track record in **...(100)...** these issues, there is a crying need for innovation.

\$\$\$

Q91. I

- (1) cross
- (2) by
- (3) for
- (4) of
- (5) through

Q92. II

- (1) together
- (2) well
- (3) great
- (4) poorly



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(5) strong

Q93. III

- (1) whether
- (2) neither
- (3) instead
- (4) giving
- (5) condition

Q94. IV

- (1) there
- (2) happen
- (3) most
- (4) cease
- (5) exist

Q95. V

- (1) associated
- (2) immovable
- (3) tapped
- (4) knocked
- (5) banked

Q96. VI

- (1) sustain
- (2) approve
- (3) believe
- (4) contradict
- (5) verify

Q97. VII

- (1) complex
- (2) trivial
- (3) awesome
- (4) humongous
- (5) stuffed

Q98. VIII

- (1) just
- (2) only
- (3) along
- (4) lonely
- (5) apart



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- Q99. IX
(1) full
(2) captures
(3) driven
(4) constraints
(5) scarce

- Q100. X
(1) looking
(2) attempt
(3) response
(4) addressing
(5) forward

Q101. 15 men and 16 women together can complete a piece of work in 6 days. If 12 women can complete the same project in 32 days, in how many days will 10 men complete the same project ?

- (1) 12
(2) 20
(3) 16
(4) 8
(5) 14

Q102. The interest earned when Rs. 'P' is invested for four years in a scheme offering 9% p.a. simple interest is more than the interest earned when the same sum (Rs. P) is invested for two years in another scheme offering 12% p.a. simple interest, by Rs. 360/-. What is the value of P ?

- (1) Rs. 2,000/-
(2) Rs. 3,500/-
(3) Rs. 2,500/-
(4) Rs. 4,000/-
(5) Rs. 3,000/-

\$\$\$ (103-108) : Refer to the pie chart and answer given questions.

Percentage of employees in different departments of branch

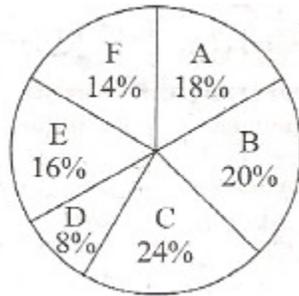
"LMN" in the year 2014

Total number of employees = 550



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\$\$\$

Q103. In 2014, there were 30% post graduate employees in department B. In 2015, 20 employees of the same department were shifted to branch 'PQR'. If in 2015, the percentage of post graduate employees in department B were the same, how many post graduate employees were shifted to branch 'PQR' ?

- (1) 4
- (2) 10
- (3) 7
- (4) 6
- (5) 5

Q104. The number of employees in department D is what percent less than the total number of employees in departments A and F together ?

- (1) 50%
- (2) 80%
- (3) 75%
- (4) 25%
- (5) 85%

Q105. In department C, the respective ratio between the number of female employees and male employees was 5 : 6. There were equal number of unmarried males and unmarried females in department C. If the respective ratio between married females and married males was 4 : 5, what is the number of unmarried females ?

- (1) 20
- (2) 8
- (3) 10
- (4) 12
- (5) 16

Q106. In 2014, the number of female employees in department E was $\frac{5}{11}$ of the total number of employees in the same department, if the number of female employees in department D was 16 less than that in department E, what is the number of male employees in department D ?

- (1) 32
- (2) 31



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- (3) 28
- (4) 20
- (5) 24

Q107. What is the average number of employees in departments C, E and F?

- (1) 89
- (2) 87
- (3) 97
- (4) 109
- (5) 99

Q108. What is the central angle corresponding to the number of employees in department F ? (in degrees)

- (1) 55.9°
- (2) 56.5°
- (3) 50.4°
- (4) 52.8°
- (5) 51.6°

Q109. Four years ago, the respective ratio between the age of Ram and that of Sonu, was 4 : 9. Tina is ten years older to Ram. Tina is ten years younger to Sonu. What is Tina's present age?

- (1) 40 years
- (2) 36 years
- (3) 30 years
- (4) 20 years
- (5) 42 years

Q110. A jar has 60 litre milk. From the jar, 12 litre of milk was taken out and replaced by an equal amount of water. If 12 litre of the newly formed mixture is taken out of the jar, what is the final quantity of milk left in the jar ?

- (1) 38.4 litre
- (2) 40 litre
- (3) 36 litre
- (4) 28.6 litre
- (5) 36.5 litre

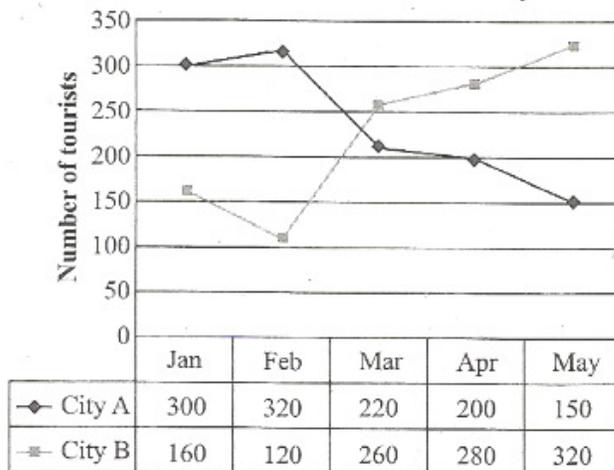
\$\$\$ (111-116) : Refer to the graph and answer the given questions.

Data (in hundreds) regarding number of tourists in two cities-A and B in five different months in the year 2005



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\$\$\$

Q111. Number of tourists in City B in April are what percent more than that in City A in the same month ?

- (1) 25%
- (2) 35%
- (3) 20%
- (4) 30%
- (5) 40%

Q112. In the month of December of the previous year (2004), the total numbers of tourists in both the cities together were 25% more than that in January 2005. What was the number of tourists in both the cities together in December 2004 ?

- (1) 57500
- (2) 52000
- (3) 60500
- (4) 54250
- (5) 60000

Q113. What is the difference between total number of tourists in cities A and B together in January and that in February ?

- (1) 2500
- (2) 2200
- (3) 1000
- (4) 1500
- (5) 2000

Q114. What is the average number of tourists in city A in February and March ?

- (1) 25000
- (2) 28000



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- (3) 27000
- (4) 26000
- (5) 28500

Q115. What is the respective ratio between the total number of tourists in city A in April and May together and that in city B in the same months together ?

- (1) 7 : 16
- (2) 7 : 12
- (3) 5 : 12
- (4) 8 : 13
- (5) 7 : 8

Q116. The number of tourists in City B in March is what percent less than that in the same city in May ?

- (1) 25%
- (2) 20%
- (3) $18 \frac{3}{4}\%$
- (4) $15 \frac{1}{2}\%$
- (5) $10 \frac{3}{5}\%$

\$\$\$ (117-121) : What approximate value will come in place of question mark (?) in the given questions? (You are not expected to calculate the exact value)

\$\$\$

Q117. $\sqrt{?} = (1346.92 + 46.94) \div 99.9 - 6.98$

- (1) 121
- (2) 441
- (3) 1024
- (4) 49
- (5) 196

Q118. $32.01^2 \times 512^{1/3} \times 33.99^2 \div (2^9 \times 16.97^2) = 2^?$

- (1) 3
- (2) 4
- (3) 9
- (4) 10
- (5) 6

Q119. $(14.99\% \text{ of } 4799.995) \div ? = (170\% \text{ of } 7.111)^2$

- (1) 150
- (2) 25
- (3) 100
- (4) 50



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(5) 5

Q120. $\frac{3}{20}$ of 239 = ? \div (1.6 x 0.499)

- (1) 30
- (2) 300
- (3) 600
- (4) 120
- (5) 80

Q121. $\sqrt{1296.002} \div 8.996 \div 9.98 + 39.4 = ?$

- (1) 80
- (2) 8
- (3) 4
- (4) 120
- (5) 40

Q122. In the year 2013, the population of a village A was 30% more than the population of village B. The population of village A in 2014 increased by 20% as compared to the previous year. If the population of village A in 2014 was 7176, what was the population of village B in 2013 ?

- (1) 4000
- (2) 5000
- (3) 4800
- (4) 4600
- (5) 5200

Q123. Tom gave 20% of a certain amount of money to Ali. From the money Ali received, he spent 25% on school fees and 35% on buying school uniform. After the mentioned expenses, Ali had Rs. 2,800/- remaining with him. How much money did Tom have initially ?

- (1) Rs.21000/-
- (2) Rs.35,000/-
- (3) Rs.30,000/-
- (4) Rs.27,000/-
- (5) Rs.28,000/-

Q124. A and B started a business with an investment of Rs. 3,500/- and Rs. 2,500/- respectively. After 4 months C joined with Rs. 6,000/-. If the difference between C's share and B's share in the annual profit was Rs. 1,977/-, what was the total annual profit ?

- (1) Rs.15,620/-
- (2) Rs.16,240/-
- (3) Rs.14,690/-
- (4) Rs. 12,770/-
- (5) Rs.13,180/-



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\$\$\$ (125-130) : Refer to the table and answer the given questions.

Data regarding number of books sold in either hard bounds or paperback editions and also the categories of books sold in fiction and non-fiction category by four different shops, in a particular month (February 2015)

Book Shop	Respective ratio between number of hardbounds sold and number of paperbacks sold	Number of paperbacks sold out of total books sold	Percentage of fictions (hardbound + paperback) sold out of total books sold
A	2 : 3	1200	60
B	1 : 5	1000	65
C	1 : 3	600	70
D	3 : 5	675	75

Note : Total books sold = Number of hard bounds + Number of paperbacks, sold
\$\$\$

Q125. Number of hard bound editions sold by shop C is what percent less than that sold by shop A ?

- (1) 90%
- (2) 50%
- (3) 75%
- (4) 70%
- (5) 80%

Q126. Number of non-fictions sold by shop B is what percent of number of non-fictions sold by shop A ?

- (1) 52.5%
- (2) 64.75%
- (3) 50%
- (4) 40%
- (5) 60%

Q127. Total number of books sold by shop B is what percent more than that sold by shop D ?

- (1) 15 1/2%
- (2) 25%
- (3) 30%
- (4) 10%
- (5) 11 1/9%

Q128. What is the average number of fictions sold by shops A and B?

- (1) 990



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- (2) 720
- (3) 880
- (4) 1100
- (5) 980

Q129. In March 2015, the number of paperback editions sold by shop D was 20% more than the same sold by the same shop in the previous month. The number of paperback editions sold in March 2015 by shop D constituted 50% of the total number of books sold by shop D in March 2015. What was the total number of books sold in March 2015 by shop D ?

- (1) 1860
- (2) 1240
- (3) 1840
- (4) 1600
- (5) 1620

Q130. What is the respective ratio between the number of non-fictions sold by shop C and number of non-fictions sold by shop D ?

- (1) 7 : 9
- (2) 8 : 9
- (3) 6 : 7
- (4) 8 : 11
- (5) 3 : 5

Q131. The distance between two places A and B is 140 km. First scooter departs from place A to B, at a speed of 50 km/h at 10 am. Second scooter departs from place B to A at a speed of 30 km/h at 12 pm. At what time will both the scooters meet each other ?

- (1) 12:30 pm
- (2) 01:50 pm
- (3) 1:00 pm
- (4) 12:50 pm
- (5) 1:30 pm

Q132. Two mobile phones were purchased at the same price. One was sold at a profit of 30% and the second was sold at a price which was Rs. 2,500/- less than the price at which the first was sold. If the overall profit earned by selling both the mobile phones was 5%, what was the cost price of one mobile phone ?

- (1) Rs.8,000/-
- (2) Rs. 5,000/-
- (3) Rs.6,000/-
- (4) Rs. 4,500/-
- (5) Rs.5,500/-

\$\$\$ (133-158) : In these questions, two equations numbered I and II are given. You have to solve both the equations and mark the appropriate option.



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Give answer:

- (1) If $x > y$
- (2) If $x \leq y$
- (3) If $x \geq y$
- (4) If $x < y$
- (5) If relationship between x and y cannot be determined

\$\$\$

Q133. I. $2x^2 - 21x + 52 = 0$ II. $2y^2 - 11y + 12 = 0$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q134. I. $3x^2 - 13x + 14 = 0$ II. $2y^2 - 5y + 3 = 0$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q135. I. $4x^2 - 8x + 3 = 0$ II. $4y^2 - 15y + 14 = 0$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q136. I. $2x^2 - 9x + 9 = 0$ II. $y^2 - 7y + 12 = 0$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q137. I. $4x^2 + 19x + 22 = 0$ II. $2y^2 + 11y + 15 = 0$

- (1) 1
- (2) 2
- (3) 3
- (4) 4



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(5) 5

Q138. I. $x^2 + 8x + 15 = 0$ II. $y^2 + 3y + 2 = 0$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

\$\$\$ (139-144) : What should come in place of question mark (?) in the following number series ?
\$\$\$

Q139. 606, 201, 66, 21, 6, ?

- (1) 0.5
- (2) 2
- (3) 5
- (4) 1
- (5) 3

Q140. 19, 10, 11, 18, 38, ?

- (1) 97.5
- (2) 110
- (3) 115
- (4) 124.5
- (5) 99.5

Q141. 6, 4, 5, 11, ?, 189

- (1) 44
- (2) 39
- (3) 65
- (4) 96
- (5) 62

Q142. 24, 26, 20, 32, 12, ?

- (1) 42
- (2) 54
- (3) 56
- (4) 46
- (5) 64

Q143. 18, 19, 24, 37, 66, ?

- (1) 158



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- (2) 224
- (3) 219
- (4) 192
- (5) 127

Q144. 19, 19.6 ,20.8, 23.2 ,28, ?

- (1) 35.7
- (2) 37.6
- (3) 31.8
- (4) 39.8
- (5) 38.2

\$\$\$ (145-149) :

These questions consist 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 choose the appropriate option.

Give answer:

- (1) If the data in statement I alone are sufficient to answer the question while the data in statement II are not sufficient to answer the question.
- (2) If the data in statement II alone are sufficient to answer the question while the data in statement I are not sufficient to answer the question.
- (3) If the data either in statement I alone or statement II alone are sufficient to answer the question.
- (4) If the data in both statements I and II together are not sufficient to answer the question.
- (5) If the data in both statements I and II are necessary to answer the question.

\$\$\$

Q145. What is the curved surface area of the right circular cylinder ?

I. Area of the base of the cylinder is 154 cm^2 .

II. Volume of the cylinder is 1232 cm^3 .

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q146. What is the area of the circular field ?

I. Area of the largest square that can be inscribed in the given square field is 2450 cm^2 .

II. Area of the smallest square in which the given circular field can be inscribed is 4900 cm^2 .

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5



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147. In how many days can 'B' alone complete the work ?

I. A, B and C together can complete the work in $3\frac{9}{13}$ days, A and B together can complete the work in $4\frac{4}{5}$ days, B and C together can complete it in $6\frac{6}{7}$ days.

II. A, B and C together can complete the piece of work in $3\frac{9}{13}$ days. A and C together can complete the work in $5\frac{1}{3}$ days.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q148. What was the initial quantity of mixture of juice and water ?

I. Juice and water were in the ratio of 8 : 3 respectively in the mixture initially.

II. When 11 litre of mixture is taken out and 6 litre of juice is added, the ratio between juice and water becomes 10 : 3 respectively.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q149. How much money did Mr. Rajesh receive as retirement funds ?

I. Out of the total money received Mr. Rajesh invested 51% in various schemes, gave 35% of the total money received to his wife and remaining money he spent on miscellaneous items.

II. Out of the total money received, Mr. Rajesh spent 5% on son's wedding and gave 35% to his wife. Out of the remaining, he invested 28% in insurance policies, 22% in pension fund scheme, 35% in share market and remaining Rs 4,50,000/- he spent on furnishing the house.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q150. The speed of a boat in still water is 15 km/h and the speed of the current is 3 km/h. The distance travelled by the boat from point A to point B downstream is 24 km more than the distance covered by the same boat from point B to point C upstream in the same time. How much time will the boat take to travel from C to B downstream ?

- (1) 2 hours
- (2) 2 hours 30 min
- (3) 2 hours 40 min



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- (4) 2 hours 10 min
- (5) 3 hours 20 min

Q151. What are code generators ?

- (1) CASE tools that enable the automatic generation of program and database definition code directly from the design documents diagrams, forms and reports stored in the repository.
- (2) CASE tools that support the circulation of graphical representations of various system elements such as process flow, data relationships, and program structures.
- (3) CASE tools that enable the easy production of user documentation in standard formats.
- (4) CASE tools that enable the easy production of technical documentation in standard formats.
- (5) CASE tools that support the production of systems forms and reports in order to prototype how systems will 'look and feel' to users.

Q152. The Web Layout View is available in which Office 2013 application ?

- (1) Excel
- (2) Word
- (3) Access
- (4) PowerPoint
- (5) Webmaker

Q153. _____ produces printout of a data in user-defined manner.

- (1) Query Language
- (2) DML
- (3) Report Generator
- (4) DCL
- (5) Metadata

Q154. Which security model is used in a peer-to-peer network ?

- (1) Password-protected Shares
- (2) Access Control Lists (ACLs)
- (3) Share-level Security
- (4) User-level Security
- (5) Access Control Entries (ACEs)

Q155. A hierarchical data model combines records and fields that are :

- (1) Cross structure and Relational structure
- (2) Tree structure
- (3) Logical manner
- (4) Cross structure
- (5) Relational structure

Q156. Which protocol is used for transferring data and information from one network to the other network ?

- (1) Internet Protocol



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- (2) Transmission Control Protocol
- (3) File Transfer Protocol
- (4) Hyper-Text Transfer Protocol
- (5) Ethernet Protocol

Q157. What does iosate mean as an argument in ofstream in C++ ?

- (1) Open file for read access only
- (2) Open file, create
- (3) Open file, but do not create
- (4) Open file, set the position to the end
- (5) Open file, for write access only

Q158. An object-oriented database does not depend upon _____ for interactions.

- (1) Data dictionary
- (2) Oracle
- (3) SQL
- (4) Index
- (5) DBMS

Q159. What is a brownout in an electrical supply system ?

- (1) A slightly elevated voltage lasting from seconds to minute.
- (2) Alternating power out, power on lasting a few minutes.
- (3) Has nothing to do with electricity.
- (4) Complete power out lasting a few minutes.
- (5) A slightly decreased voltage lasting from seconds to minutes or more.

Q160. Which common backstage view task creates a PDF file from an existing file ?

- (1) Export
- (2) Account
- (3) Create
- (4) Options
- (5) Info

Q161. Which device operates at the internet layer of the TCP/IP model ?

- (1) Switch and Hub
- (2) Router
- (3) Switch
- (4) PBX
- (5) Firewall

Q162. A coding scheme recognized by system software for representing organizational data best defines a _____

- (1) Data type
- (2) Data size



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- (3) Tuple
- (4) Hyperlink
- (5) Hashing algorithms

Q163. Which phase of the SDLC involves converting to the new system ?

- (1) Systems design
- (2) Systems implementation
- (3) Systems analysis
- (4) Systems development
- (5) Other than those mentioned as options

Q164. What is the purpose of Address Resolution Protocol (ARP)?

- (1) To resolve known IP addresses to unknown physical addresses
- (2) To resolve domain names to unknown IP addresses
- (3) To resolve MAC addresses and NetBIOS names to IP addresses
- (4) To resolve known MAC addresses to unknown IP addresses
- (5) To resolve NetBIOS names to IP addresses

Q165. In Java, communication between objects is done by :

- (1) calling a method
- (2) creating a class hierarchy
- (3) defining a Java class
- (4) creating a class
- (5) running a program

Q166. Which of the following CASH tools generate reports that help you identify possible inconsistencies, redundancies and omissions in diagrams, forms and reports ?

- (1) Form generators
- (2) Report generators
- (3) Diagramming tools
- (4) Analysis tools
- (5) Documentation generators

Q167. An attribute whose value is unique across all occurrences of a relation.

- (1) Primary key
- (2) Recursive key
- (3) Join attribute
- (4) Data marker
- (5) Single-valued key

Q168. AN IP protocol field of 0 x 06 indicates that IP is carrying what as its payload ?

- (1) UDP or IGRP
- (2) UDP
- (3) ICMP



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- (4) TCP
- (5) IGRP

Q169. A named set of table rows stored in a contiguous section of secondary memory best describes a(n) _____

- (1) Entity
- (2) Collection
- (3) Physical file
- (4) Pointer
- (5) Relation

Q170. Which of the following attributes makes TCP reliable ?

- (1) Connectionless establishment
- (2) Low overhead and Null sessions
- (3) Null sessions
- (4) Connection-establishment
- (5) Low overhead

Q171. Which shortcut will create a new folder in a Windows folder?

- (1) Ctrl + C
- (2) Ctrl + Shift + N
- (3) Ctrl + V
- (4) Ctrl + Alt
- (5) Ctrl + O

Q172. Which of the following is not a benefit of networks ?

- (1) Increased data integrity
- (2) Sharing of peripheral devices
- (3) Sharing of programs and data
- (4) Access to databases
- (5) Better communications

Q173. Which type of software is best used with specific questions to verify hypotheses ?

- (1) Data fusion tools
- (2) Intelligent agents
- (3) Data cleansing tools
- (4) Query-and-reporting tools
- (5) Multidimensional-analysis tools

Q174. Which method of database recovery involves undoing unwanted changes to the database, such as undoing a partially completed transaction interrupted by a power failure ?

- (1) Rollforward
- (2) Mirroring
- (3) Reprocessing



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- (4) Rollback
- (5) Other than those given as options

Q175. What is the default maximum number of processes that can exist in Linux (with a 32-bit platform) ?

- (1) 1024
- (2) 32768
- (3) Unlimited
- (4) 4096
- (5) 99999

Q176. The network database model uses _____

- (1) Rows and fields
- (2) Data elements
- (3) Keys
- (4) Records and sets
- (5) Data dictionary

Q177. _____ is a communication medium where data are transformed into light pulses.

- (1) Twisted-pair cable
- (2) Optical fibre
- (3) Coaxial cable
- (4) Copper cable
- (5) Satellite

Q178. _____ is a computer with a Web server that serves the pages for one or more websites.

- (1) Portal
- (2) Backbone
- (3) Business Service Provider
- (4) Host
- (5) Gateway

Q179. The database management software creates and reads the data dictionary to ascertain what _____ exist and checks to see if specific users have the proper access rights to view them.

- (1) Data element definitions
- (2) Schema objects
- (3) Metadata
- (4) Reference keys
- (5) Metadata and data element definitions

Q180. The foreign key is not necessarily the _____ in its current table.

- (1) Report generator



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- (2) Foreign key
- (3) Primary key
- (4) Data dictionary
- (5) Schema objects

Q181. Hierarchical databases do not use _____ as relational databases do for searching procedures.

- (1) Indexes
- (2) Primary key
- (3) Database dictionary
- (4) Rows and Columns
- (5) Foreign key

Q182. A/an _____ can shield electronic equipment from power spikes.

- (1) UPS
- (2) Surge protector
- (3) Firewall
- (4) Encryption program
- (5) Antivirus

Q183. If there are no functional dependencies between two (or more) non-primary key attributes, this describes _____

- (1) Third normal form
- (2) Fifth normal form
- (3) Second normal form
- (4) First normal form
- (5) Fourth normal form

Q184. _____ is a special field value, distinct from 0, blank or any other value, that indicates that the value for the field is missing or otherwise unknown.

- (1) BLOB value
- (2) Designated value
- (3) Null value
- (4) Hashed value
- (5) Nonspecific value

Q185. The concept of 'zero administration' is associated with :

- (1) Desktop computers
- (2) Mini computers
- (3) PDAs and organizers
- (4) Portable computers
- (5) Network computers



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Q186. Collecting personal information and effectively posing as another individual is a crime known as _____

- (1) Spoofing
- (2) Identity theft
- (3) Hacking
- (4) Personality theft
- (5) Spooling

Q187. A relational database model uses _____ to contain and organize information.

- (1) Records and fields
- (2) Image, audio, documents
- (3) Columns and rows
- (4) Foreign key
- (5) Data dictionary

Q188. Which of the following forms is used specifically to identify the entity created when encapsulating data inside data link layer headers and trailers ?

- (1) Packet
- (2) Segment
- (3) Data
- (4) Chunk
- (5) Frame

Q189. Which of the following is a valid class declaration in C++ ?

- (1) Class B { }
- (2) Public class A { }
- (3) Class B { } and public class A { }
- (4) Class A { int x; };
- (5) Object A { int x; };

Q190. _____ is a device that has been customized to perform few specialized computing tasks well with minimal effort.

- (1) Dedicate appliance
- (2) Information appliance
- (3) Shopping bot
- (4) Server appliance
- (5) Substandard device

Q191. A good example of an operating system that makes your computer function and controls the working environment is _____

- (1) Microsoft Account
- (2) File Explorer
- (3) Microsoft Office 2013
- (4) Windows 8



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(5) Task Manager

Q192. _____ are used to refer to Java methods or variables that belongs to other classes.

- (1) Simple names
- (2) Keywords
- (3) External names
- (4) Qualified names
- (5) Method calls

Q193. Which connectionless protocol is used for its low overhead and speed ?

- (1) ARP
- (2) TCP and ARP
- (3) ICMP
- (4) UDP
- (5) TCP

Q194. Which spread spectrum technology does the 802.11b standard define for operation ?

- (1) IR, FHSS and DSSS
- (2) DSSS
- (3) DSSS and FHSS
- (4) FHSS
- (5) IR

Q195. Which of the following ensures that only authorized users can use or apply specific software applications ?

- (1) Service level agreement
- (2) Access log
- (3) Dongle
- (4) Private key
- (5) Authorized program analysis report

Q196. _____ is an attempt to make a machine or network resource unavailable to its intended users, such as to temporarily or indefinitely interrupt or suspend services of a host connected to the internet due to bombardment of fake traffic.

- (1) Cracking
- (2) A trojan horse
- (3) A virus
- (4) A denial of service attack
- (5) A worm

Q197. Which of the following best supports communication availability, acting as a countermeasure to the vulnerability of component failure ?

- (1) Integrated corrective network controls



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- (2) Simple component redundancy
- (3) High network throughput rate
- (4) Careful network monitoring with a dynamic real-time alerting system
- (5) Other than those given as options

Q198. Data transmission technologies vary. Which one does Ethernet use ?

- (1) CSMA/CS
- (2) CSMA/CA or CSMA/CS
- (3) CSMA/CD
- (4) CSNA/CD
- (5) CSMA/CA

Q199. Applications communicate with kernel by using _____

- (1) Unit calls
- (2) Shell script
- (3) System calls
- (4) Shell
- (5) C Programs

Q200. In which of the following office applications, can you name a file at the same time you create it ?

- (1) Access
- (2) PowerPoint
- (3) Paint
- (4) Word
- (5) Excel

---Answer---

- A1.4
- A2.4
- A3.3
- A4.4
- A5.4
- A6.5
- A7.4
- A8.4
- A9.5
- A10.2
- A11.1
- A12.3
- A13.1
- A14.1
- A15.2
- A16.4



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A17.3
A18.2
A19.1
A20.4
A21.2
A22.5
A23.4
A24.5
A25.3
A26.2
A27.1
A28.2
A29.4
A30.3
A31.5
A32.1
A33.2
A34.1
A35.3
A36.1
A37.3
A38.2
A39.2
A40.5
A41.3
A42.1
A43.1
A44.1
A45.4
A46.4
A47.1
A48.1
A49.4
A50.3
A51.1
A52.1
A53.1
A54.2
A55.2
A56.2
A57.2
A58.3
A59.5
A60.4

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A61.5
A62.1
A63.5
A64.4
A65.1
A66.1
A67.5
A68.3
A69.2
A70.1
A71.5
A72.4
A73.4
A74.1
A75.2
A76.3
A77.2
A78.1
A79.4
A80.5
A81.4
A82.3
A83.5
A84.1
A85.4
A86.3
A87.4
A88.5
A89.1
A90.3
A91.5
A92.2
A93.1
A94.5
A95.3
A96.1
A97.4
A98.2
A99.4
A100.4
A101.1
A102.5
A103.4
A104.3

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A105.4
A106.4
A107.5
A108.3
A109.3
A110.1
A111.5
A112.1
A113.5
A114.3
A115.2
A116.3
A117.4
A118.5
A119.5
A120.1
A121.5
A122.4
A123.2
A124.5
A125.3
A126.1
A127.5
A128.1
A129.5
A130.2
A131.1
A132.2
A133.3
A134.1
A135.4
A136.2
A137.5
A138.4
A139.4
A140.1
A141.2
A142.1
A143.5
A144.2
A145.5
A146.3
A147.3
A148.5

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A149.2
A150.3
A151.1
A152.2
A153.3
A154.1
A155.2
A156.3
A157.4
A158.3
A159.5
A160.1
A161.2
A162.1
A163.2
A164.1
A165.1
A166.4
A167.1
A168.4
A169.3
A170.4
A171.2
A172.5
A173.4
A174.4
A175.2
A176.1
A177.2
A178.4
A179.2
A180.3
A181.1
A182.2
A183.1
A184.3
A185.1
A186.1
A187.3
A188.5
A189.4
A190.3
A191.4
A192.5

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- A193.4
- A194.2
- A195.2
- A196.4
- A197.2
- A198.3
- A199.3
- A200.4

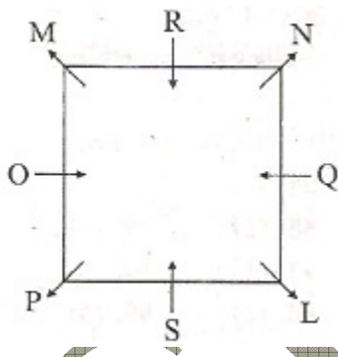
---Answer---

---Explanation---

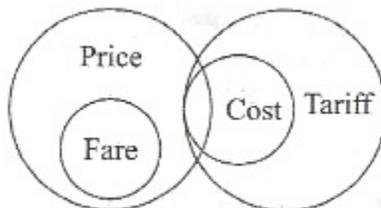
E1. According to question.

$$\begin{array}{ccccccc} 2 & 3 & 6 & 8 & 5 & 4 & 7 \\ -1 \downarrow & +2 \downarrow & -1 \downarrow & -1 \downarrow & +2 \downarrow & -1 \downarrow & +2 \downarrow \\ 1 & 5 & 5 & 7 & 7 & 3 & 9 \end{array}$$

Ans. (2-6):



E7.

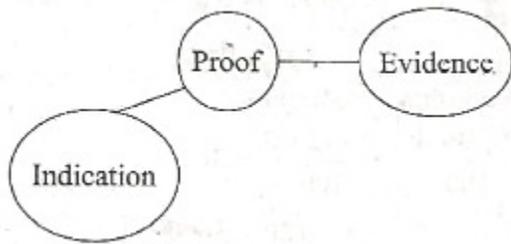


E8.

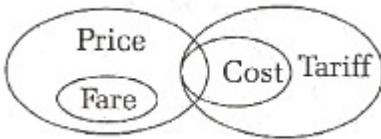


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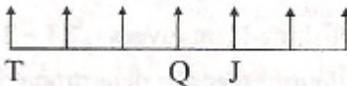
E9.



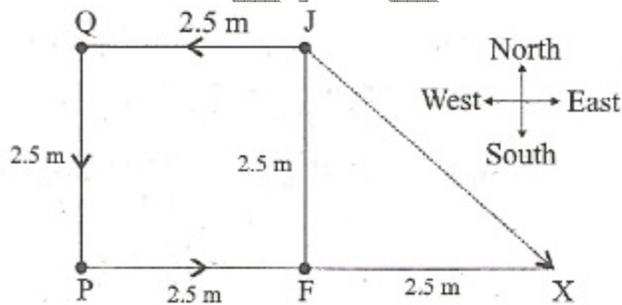
Ans: (10-11)



E12. From statement I,



E13. From statement I,

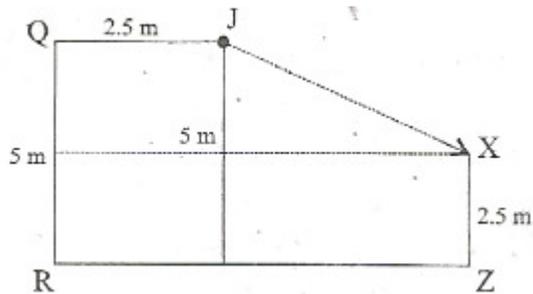


From statement II,

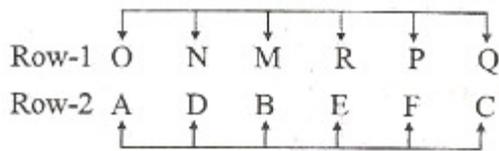


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Ans. (14-18):



Ans. (23-28):

Day	Friend	City
Monday	V	Madrid
Tuesday	T	Chicago
Wednesday	Q	Miami
Thursday	U	Berlin
Friday	R	Kabul
Saturday	S	Jakarta
Sunday	P	Sydney

Ans. (29-33):

Floor	People
8	W
7	Q
6	R
5	X
4	Y



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3	P
2	S
1	Z

E34. **Statements :** $L \leq Q \leq R = S$

$R > H \geq P$

$P \leq H < R = S$

$L \leq Q \leq R > H \geq P$

Conclusions : I. $P < S \rightarrow$ True

II. $L \leq P \rightarrow$ False

E35. **Statements:** $W \geq A = S \geq U < K$

$U \geq Y$

$W \geq A = S \geq U \geq Y$

Conclusions: I. $K > W \rightarrow$ False

II. $Y \leq W \rightarrow$ True

E36. **Statements :** $Y \leq U < W > S$

$M \geq W > D$

$Y \leq U < W \leq M$

$D < W > S$

Conclusions : I. $Y < M \rightarrow$ True

II. $S < D \rightarrow$ False

Q37. **Statements :** $S \leq P = Q < J$

$Q \leq Y$

$P \leq L$

$L \geq P = Q < J$

Conclusions : I. $J > L \rightarrow$ False

II. $S < J \rightarrow$ True

E38. **Statements :** $S \leq P = Q < J$

$Q < Y$

$P \leq L$

$S \leq P = Q \leq Y$

Conclusions : I. $Y > S$ }



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II. S = Either conclusion I or II

Ans. (39-43) :

Input : offense 71 vaccine 12 39 garbage absorb 86 earlier 25 malign 64

Step I : absorb offense 71 1239garbage86earlier25malign64vaccine

Step II : earlier absorb offense 71 12 39 garbage 86 25 64 vaccine malign

Step III: offense earlier absorb 71 12 39 86 25 64 vaccine malign garbage

Step IV: 71 offense earlier absorb 39 86 25 64 vaccine malign garbage 12

Step V : 3971 offense earlier absorb 86 25 vaccine malign garbage 12 64

Step VI: 25 3971 offense earlier absorb vaccine malign garbage 1264 86

Ans. (45-49) :

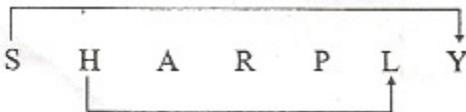
gloves are found there → vg xa ze co

two pairs of gloves → sh yc ti xa

found two new friends → wd vg nu sh

all packets are new → om co nu qk

E50.



∴ Required pairs = {SY, HL}

E76. Use "demand" in place of "demands"

E77. Remove "on" after "arrived"

E78. Use "late" in place of "lately"

E79. Use "at" in place of "on"

E80. No error

E81. Use "tizzy" in place of "fizzy"



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E82. Use "expedite" in place of "expediting"

E83. No error

E84. Use "agitating" in place of "agitated"

E85. Remove "for" after "dropped"

E101. According to question,
 $(15M + 16W) \times 6 = (12W) \times 32$
 $90M = 288W$
 $1M = 16/5 W$
 $\therefore 10M = 32W$
 $M_1D_1 = M_2D_2$
 $12 \times 32 = 32 \times x$
 $x = 12$ days

E102. According to question,
 $P \times 9 \times 4 / 100 - P \times 12 \times 2 / 100 = 360$
 $12P = 36000$
 $P = 3,000/-$

E103. Total number of employees in department B
 $= 550 \times 20/100 = 110$
In 2014, number of graduate employees in
department B $= 110 \times 30/100 = 33$
In 2015, number of remaining employees
 $= 110 - 20 = 90$
In 2015, the number of graduate employees in
department B $= 90 \times 30/100 = 27$
 \therefore Number of shifted employees $= 33 - 27 = 6$

E104. Number of employees in department D
 $= 550 \times 8/100 = 44$
Total number of employees in departments A and F
together $= 550 \times 32/100 = 176$
 \therefore Required percentage $= 176 - 44 / 176 \times 100$
 $= 132 / 176 \times 100 = 75\%$

E105. Total number of employees in department C



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$$= 550 \times 24/100 = 132$$

$$\text{Number of female employees} = 132 \times 5/11 = 60$$

$$\text{Number of male employees} = 132 \times 6/11 = 72$$

Let the number of unmarried males and females = x

According to question,

$$60 - x / 72 - x = 4/5$$

$$300 - 5x = 288 - 4x; \quad x = 12$$

E106. Total number of employees in department

$$D = 550 \times 8/100 = 44$$

Total number of employees in department

$$E = 550 \times 16/100 = 88$$

Number of female employees in department

$$E = 88 \times 5/11 = 40$$

Number of female employees in department

$$D = 40 - 16 = 24$$

\therefore Number of male employees in department

$$D = 44 - 24 = 20$$

$$\text{E107. Required average} = \{550 \times (16 + 24 + 14) / 3\}$$

$$= \{550 \times 54/100\} / 3 = 297/3 = 99$$

$$\text{E108. Required angle} = 360/100 \times 14 = 50.4^\circ$$

$$\text{E109. Ram's present age} = 4x + 4$$

$$\text{Sonu's present age} = 9x + 4$$

According to question,

$$4x + 4 + 10 = 9x + 4 - 10$$

$$5x = 20; \quad x = 4 \text{ years}$$

$$\therefore \text{Tina's present age} = 4x + 14 = 4 \times 4 + 14$$

$$= 30 \text{ years}$$

E110. Remaining quantity of milk

$$= \text{Initial quantity} \{1 - \text{Taken out quantity} / \text{Initial quantity}\}^n$$

$$= 60 (1 - 12/60)^2 = 60 (1 - 1/5)^2 = 60(4/5)^2$$

$$= 60 \times 16/25 = 38.4 \text{ litre}$$



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$$E111. \text{ Required percentage} = 280 - 200 / 200 \times 100 = 80/2 = 40\%$$

$$\begin{aligned} E112. \text{ Required number} &= (300 + 160) \times 125/100 \\ &= 460 \times 125/100 = 575 \text{ hundreds} \\ &= 57500 \end{aligned}$$

$$\begin{aligned} E113. \text{ Required difference} \\ &= [(300 + 160) - (320 + 120)] \times 100 \\ &= [460 - 440] \times 100 = 2000 \end{aligned}$$

$$E114. \text{ Required average} = \{320 + 220/2\} \text{ hundreds} = 27000$$

$$E115. \text{ Required ratio} = 200 + 150 / 280 + 320 = 350/600 = 7 : 12$$

$$\begin{aligned} E116. \text{ Required percentage} &= (320 - 260/320) \times 100 \\ &= 60/320 \times 100 = 75/4 = 18 \frac{3}{4}\% \end{aligned}$$

$$\begin{aligned} E117. \sqrt{?} &= (1346.92 + 46.94) \div 99.9 - 6.98 \\ \sqrt{?} &= (1347 + 47) / 100 - 7 \\ \sqrt{?} &= 13.94 - 7 \\ \sqrt{?} &= 6.94 \approx 7 \quad \therefore ? = 7 \times 7 = 49 \end{aligned}$$

$$\begin{aligned} E118. 32.01^2 \times 512^{1/3} \times 33.99^2 \div (2^9 \times 16.97^2) &= 2^? \\ 2^? &= (32)^2 \times (512)^{1/3} \times 34^2 / 2^9 \times 17^2 \\ 2^? &= (2^5)^2 \times (2^9)^{1/3} \times 34 \times 34 / 2^9 \times 17 \times 17 \\ 2^? &= 2^4 \times 2 \times 2 \\ 2^? &= 2^6 \quad \therefore ? = 6 \end{aligned}$$

$$\begin{aligned} E119. (14.99\% \text{ of } 4799.995) \div ? &= (170\% \text{ of } 7.111)^2 \\ (15 \times 4800/100) \div ? &= (170 \times 7/100)^2 \\ 720/? &= 12 \times 12 \\ ? &= 720 / 12 \times 12 = 5 \end{aligned}$$

$$E120. 3/20 \text{ of } 239 = ? \div (1.6 \times 0.499)$$



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$$3/20 \times 240 = ? / 1.6 \times 0.5$$

$$? = 3 \times 12 \times 0.8$$

$$? = 28.8$$

$$? \approx 30$$

$$E121. \sqrt{1296.002} \div 8996 \div 9.98 + 39.4 = ?$$

$$36/9 \times 10 + 39.4 = ?$$

$$0.4 + 39.4 = ?$$

$$? = 39.8$$

$$? \approx 40$$

E122. Let the population of village B in year 2013 = x

and the population of village A in year 2013 = x x 130/100

Population of village A in year 2014

$$= 130/100 \times x \times 120/100 = 156/100 \times x$$

According to question,

$$156 / 100 \times x = 7176$$

$$x = 4600$$

E123. Let Tom has the money initially = Rs. x

Amount received by Ali = x x 20/100 = Rs. x/5

Remaining amount to Ali = x/5 x 40/100 = 2x/25

According to question,

$$2x/25 = 2800$$

$$x = \text{Rs.}35,000/-$$

E124. Ratio of the profit of A, B and C

$$= (3500 \times 12) : (2500 \times 12) : (6000 \times 8) = 7 : 5 : 8$$

According to question,

$$8x - 5x = 1977$$

$$3x = 1977$$

$$x = 659$$

$$\therefore \text{Total annual profit} = (8 + 5 + 7) \times x$$

$$= 20x = 20 \times 659 = \text{Rs.}13,180/-$$

E125. Number of hard bound editions sold by shop A = $1200 \times 2/3 = 800$

Number of hard bound editions sold by shop C = $600 \times 1/3 = 200$

$$\therefore \text{Required percentage} = 800 - 200/800 \times 100 = 600/800 = 75\%$$

E126. Total number of books sold by shop B = $6/5 \times 1000 = 1200$



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Number of non-fiction books sold by shop B = $1200 \times 35/100 = 420$

Total number of books sold by shop A = $5/3 \times 1200 = 2000$

Number of non-fiction books sold by shop A = $2000 \times 40/100 = 800$

\therefore Required percentage = $420/800 \times 100 = 52.5\%$

E127. Total number of books sold by shop D = $8/5 \times 675 = 1080$

Total number of books sold by shop B = 1200

\therefore Required percentage = $(1200 - 1080)/1080 \times 100$

= $1200/108 = 11 \frac{1}{9}\%$

E128. Number of fiction books sold by shop A

= 60% of $(5/3 \times 1200) = 2000 \times 60/100 = 1200$

Number of fiction books Sold by shop B

= 65% of $(6/5 \times 1000) = 65/100 \times 1200 = 780$

\therefore Required average = $1200 + 780/2 = 990$

E129. In March 2015, total number of paperback edition sold by shop D = $675 \times 120/100 = 810$

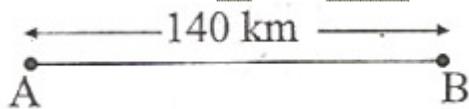
\therefore Total number of books sold in March 2015 = $810 \times 2 = 1620$

E130. Number of non-fiction books sold by shop C = 30% of $(4/3 \times 600) = 30/100 \times 800 = 240$

Number of non-fiction books sold by shop D = 25% of $(8/5 \times 675) = 1080 \times 25/100 = 270$

\therefore Required ratio = $240/270 = 8:9$.

E131.



Distance travelled by the first scooter in 2 hours = Speed x Time = $50 \times 2 = 100$ km

Remaining distance = $140 - 100 = 40$ km

time to meet both scooters = Distance/Relative Speed

= $40/50 + 30 = 40/80 = \frac{1}{2}$ hour

\therefore Both the scooters will meet after 2 hours and 30 min means at 12.30 pm.

E132. Let the cost price of each mobile

According to question,

$x \times 130/100 + (130/100x - 2500) = 2x \times 105/100$

$26x/10 - 2500 = 21/10x$



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$$5x = 25000; \quad x = \text{Rs } 5,000/-$$

E133.

$$\text{I. } 2x^2 - 21x + 52 = 0$$

$$2x^2 - 8x - 13x + 52 = 0$$

$$2x(x - 4) - 13(x - 4) = 0$$

$$(x - 4)(2x - 13) = 0$$

$$\Rightarrow x = 4, 11/2$$

$$\text{II. } 2y^2 - 11y + 12 = 0$$

$$2y^2 - 8y - 3y + 12 = 0$$

$$2y(y - 4) - 3(y - 4) = 0$$

$$(y - 4)(2y - 3) = 0$$

$$\Rightarrow y = 4, 3/2$$

$$\therefore x \geq y$$

$$\text{E134. I. } 3x^2 - 13x + 14 = 0$$

$$3x^2 - 6x - 7x + 14 = 0$$

$$3x(x - 2) - 7(x - 2) = 0$$

$$(x - 2)(3x - 7) = 0$$

$$\Rightarrow x = 2, 7/3$$

$$\text{II. } 2y^2 - 5y + 3 = 0$$

$$2y^2 - 2y - 3y + 3 = 0$$

$$2y(y - 1) - 3(y - 1) = 0$$

$$(y - 1)(2y - 3) = 0$$

$$\Rightarrow y = 1, 3/2$$

$$\therefore x > y$$

$$\text{E135. I. } 4x^2 - 8x + 3 = 0$$

$$4x^2 - 2x - 6x + 3 = 0$$

$$2x(2x - 1) - 3(2x - 1) = 0$$

$$(2x - 1)(2x - 3) = 0$$

$$\Rightarrow x = 1/2, 3/2$$

$$\text{II. } 4y^2 - 15y + 14 = 0$$

$$4y^2 - 8y - 7y + 14 = 0$$

$$4y(y - 2) - 7(y - 2) = 0$$

$$(y - 2)(4y - 7) = 0$$

$$\Rightarrow y = 2, 7/4$$

$$\therefore x < y$$

$$\text{E136. I. } 2x^2 - 9x + 9 = 0$$



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$$\begin{aligned}2x^2 - 6x - 3x + 9 &= 0 \\2x(x - 3) - 3(x - 3) &= 0 \\(x - 3)(2x - 3) &= 0 \\ \Rightarrow x &= 3, 3/2\end{aligned}$$

$$\begin{aligned}\text{II. } y^2 - 7y + 12 &= 0 \\y^2 - 4y - 3y + 12 &= 0 \\y(y - 4) - 3(y - 4) &= 0 \\(y - 3)(y - 4) &= 0 \\ \Rightarrow y &= 3, 4 \\ \therefore x &\leq y\end{aligned}$$

$$\begin{aligned}\text{E137.I. } 4x^2 + 19x + 22 &= 0 \\4x^2 + 8x + 11x + 22 &= 0 \\4x(x + 2) + 11(x + 2) &= 0 \\(x + 2)(4x + 11) &= 0 \\ \Rightarrow x &= -2, -11/4\end{aligned}$$

$$\begin{aligned}\text{II. } 2y^2 + 11y + 15 &= 0 \\2y^2 + 6y + 5y + 15 &= 0 \\2y(y + 3) + 5(y + 3) &= 0 \\(y + 3)(2y + 5) &= 0 \\ \Rightarrow y &= -3, -5/2 \\ \therefore \text{Relationship between } x \text{ and } y &\text{ cannot be determined.}\end{aligned}$$

$$\begin{aligned}\text{E138.I. } x^2 + 8x + 15 &= 0 \\x^2 + 5x + 3x + 15 &= 0 \\x(x + 5) + 3(x + 5) &= 0 \\(x + 3)(x + 5) &= 0 \\ \Rightarrow x &= -3, -5\end{aligned}$$

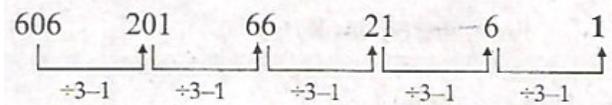
$$\begin{aligned}\text{II. } y^2 + 3y + 2 &= 0 \\y^2 + 2y + y + 2 &= 0 \\(y + 2) + 1(y + 2) &= 0 \\(y + 1)(y + 2) &= 0 \\ \Rightarrow y &= -1, -2 \\ \therefore x &< y\end{aligned}$$

E139.

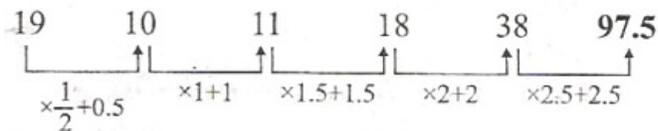


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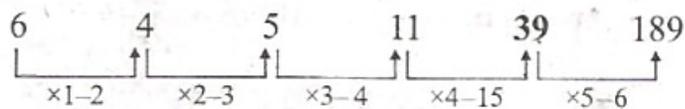
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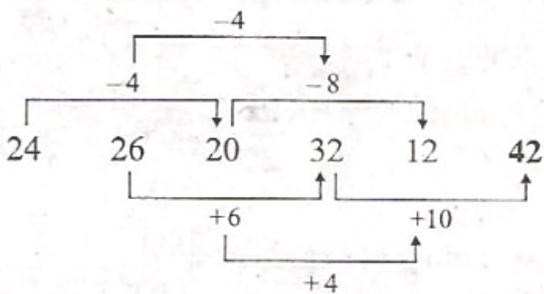
E140.



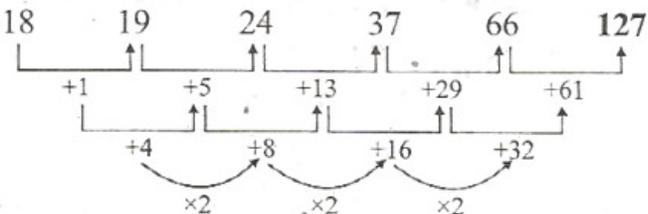
E141.



E142.



E143.

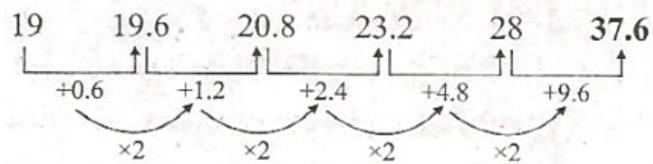


E144.



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E145. From statement I,

$$\pi r^2 = 154$$

$$22/7 \times r^2 = 154$$

$$r = 7 \text{ cm}$$

From statement II,

$$\pi r^2 h = 1232$$

$$h = 1232/54$$

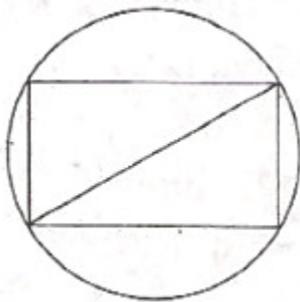
$$h = 8 \text{ cm}$$

$$\therefore \text{Curved surface area of the cylinder} = 2\pi r h$$

$$= 2 \times 22/7 \times 7 \times 8$$

$$= 352 \text{ sq cm}$$

E146. From statement I,



Diagonal of square = Diameter of circle

$$\text{Side of square} = \sqrt{2450} = 35\sqrt{2}$$

$$\text{Diagonal of square} = 35\sqrt{2} \times \sqrt{2} = 70 \text{ cm}$$

$$\text{Radius of circle} = 70/2 = 35 \text{ cm}$$

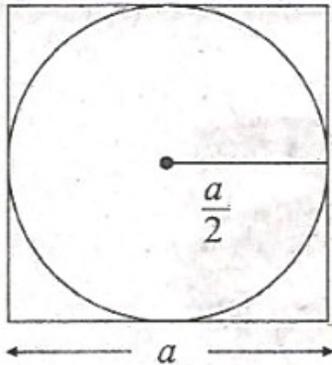
$$\therefore \text{Area of circular field} = 22/7 \times 35 \times 35 = 3850 \text{ sq cm}$$

From statement II,



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Let side of the square = a cm

Radius of the circle = $a/2$ cm

$$a^2 = 4900$$

$$a = 70 \text{ cm}$$

$$\text{Area of circular field} = \pi (a/2)^2$$

$$= 22/7 \times 35 \times 35$$

$$= 3850 \text{ sq cm}$$

E147. From statement I,

$$(A + B + C)'s \text{ 1 day's work} = 13/48$$

$$(A + 2B + C)'s \text{ 1 day's work} = 5/24 + 7/48 = 10 + 7/48 = 17/48$$

$$\therefore B's \text{ 1 day's work} = 17/48 - 13/48 = 4/48 = 1/12$$

Required time = 12 days

From statement II,

$$(A+B+C)'s \text{ 1 day's work} = 13/48$$

$$(A+C)'s \text{ 1 day's work} = 3/16$$

$$\therefore B's \text{ 1 day's work} = 13/48 - 3/16 = 13 - 9/48 = 4/48 = 1/12$$

E148. From statement I,

$$\text{Juice} = 8x \text{ litre}$$

$$\text{Water} = 3x \text{ litre}$$

From statement II,

$$8x - 11 \times 8/11 + 6/3x - 11 \times 3/11 = 10/3$$

$$= 8x - 2/3x - 3 = 10/3$$

$$24x - 6 = 30x - 30$$

$$x = 4 \text{ litre}$$

$$\therefore \text{Initial quantity of mixture} = 11x$$

$$= 11 \times 4 = 44 \text{ litre}$$

E149. From statement II,

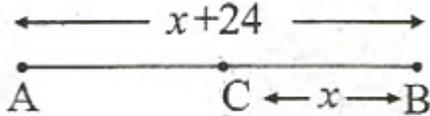


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Let the initial amount that Rajesh have = Rs x
Amount spent on son's marriage and on wife = 40%
Remaining amount = $x \times 60/100 = 3x/5$
Amount spent from remaining amount
= $(28 + 22 + 35)$
= 85%
Now, remaining amount = $3x/5 \times 15/100$
= $9x/100$
According to statement,
 $9x/100 = 450000$
 $x = \text{Rs } 50,00,000/-$

E150. Downstream speed of boat = $15 + 3 = 18 \text{ km/h}$
Upstream speed of boat = $15 - 3 = 12 \text{ km/h}$



Let $BC = x \text{ km}$
 $AB = (x + 24) \text{ km}$
According to question,
 $x + 24/18 = x/12$
 $2x + 48 = 3x$
 $x = 48 \text{ km}$
Time taken by boat to travel from C to B downstream = $48/18 \text{ hours}$
= $8/3 \text{ hours} = 2 \text{ hours} = 12/18 \times 60 \text{ min}$
= 2 hours 40 min

---Explanation---



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