

FIITJEE INTERNAL TEST

MOCK TEST - 3

for

NTSE STAGE – I

(All Class X Batches)

Mental Ability Test (MAT)

QP CODE:

Time: 120 Minutes

Maximum Marks: 100

Please read the instructions carefully.

INSTRUCTIONS

A: General :

1. Immediately fill in the particulars on this page of the Test Booklet with Blue/Black Ball point pen.
2. Use **Blue/Black Ball Point Pen only** for writing particulars on **Side-1** and **Side-2** of the Answer Sheet. **Use of pencil is strictly prohibited.**
3. Darken the appropriate bubbles with **HB Pencil** only.
4. Blank papers, clipboards, log tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed.
5. The answer sheet, a machine-gradable Objective Response Sheet (ORS) is provided separately.
6. Do not Tamper/mutilate the **ORS** or this booklet.
7. No additional sheets will be provided for rough work
8. On completion of this test, the candidate must hand over the Answer Sheet to the Invigilator on duty in the Room/Hall. **However, the candidates are allowed to take away this Test Booklet with them.**

B: Questions paper format and Marking Scheme :

1. The question paper consists of *100 questions*.
2. For each question you will be **awarded 1 mark** if you darken the bubble corresponding to the correct answer and zero mark if no bubbles is darkened or your response is incorrect.

Enrollment No. : Batch : _____

Name : _____

Candidate's Signature _____ Invigilator's Signature: _____

Directions (Questions 1 – 3): Select the correct alternative from the given choices:

1. Select the correct alternative from the given choices:
1100, 810, 576, 392, ?, 150
(A) 250 (B) 252
(C) 260 (D) 242

1. **B**

2. Select the correct alternative from the given choices:
6, 40, 215, 1095, ?
(A) 5400 (B) 5600
(C) 5500 (D) 5450

2. **C**

3. Select the correct alternative from the given choices:
4, 5, 9, 14, 23, 37, ?
(A) 58 (B) 53
(C) 60 (D) 50

3. **C**

Directions (Questions 4 – 5): Select the correct alternative from the given choices:

4. In a certain code language, if $21 + 22 = 25$ and $23 + 24 = 107$, find the value of $11 + 12 = ?$
(A) 11 (B) 5
(C) 7 (D) 25

4. **A**

5. If '+' means 'x', '-' means '÷', 'x' means '+' and '÷' means '-', then
 $14 \times 5 \div 18 - 9 + 2$ is equal to
(A) 15 (B) 0
(C) 43 (D) 4

5. **A**

Directions (Question 6 – 8):

For the words given in column I, the codes are given in Column II. Answer the following questions by finding the codes for the letters from the words and their codes given in the columns.

| | Column-I | Column-II |
|---|----------|-----------|
| 1 | PRETEND | 4396408 |
| 2 | COMMON | 615715 |
| 3 | HOUSE | 4*2&1 |
| 4 | SUPPORT | 3*21839 |
| 5 | DRUM | 5*08 |

6.

For the words given in column I, the codes are given in Column II. Answer the following questions by finding the codes for the letters from the words and their codes given in the columns.

⊕

| | Column-I | Column-II |
|---|----------|-----------|
| 1 | PRETEND | 4396408 |
| 2 | COMMON | 615715 |
| 3 | HOUSE | 4*2&1 |
| 4 | SUPPORT | 3*21839 |
| 5 | DRUM | 5*08 |

What is the code for the word PROTECT?

- (A) 3895479
(C) 3819479

- (B) 3846978
(D) 3814978

6. **C**

7.

For the words given in column I, the codes are given in Column II. Answer the following questions by finding the codes for the letters from the words and their codes given in the columns.



| | Column-I | Column-II |
|---|----------|-----------|
| 1 | PRETEND | 4396408 |
| 2 | COMMON | 615715 |
| 3 | HOUSE | 4*2&1 |
| 4 | SUPPORT | 3*21839 |
| 5 | DRUM | 5*08 |

What is the code for the word HORMONE?

- (A) &385364
(C) &175184

- (B) &176561
(D) &185164

7. **D**

8.

For the words given in column I, the codes are given in Column II. Answer the following questions by finding the codes for the letters from the words and their codes given in the columns.



| | Column-I | Column-II |
|---|----------|-----------|
| 1 | PRETEND | 4396408 |
| 2 | COMMON | 615715 |
| 3 | HOUSE | 4*2&1 |
| 4 | SUPPORT | 3*21839 |
| 5 | DRUM | 5*08 |

What is the code for the word EMPEROR?

- (A) 5495717
(C) 3453910

- (B) 4534818
(D) 4537178

8. **B**

9. In a certain code language, if the word FANTASTIC is coded as SMZEBDJUT, then how is the word DIRECTION coded in that language?

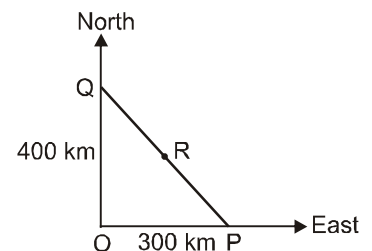
- (A) EHQDDUJPO
(C) DQHEUJPOD

- (B) DQHCDOPJU
(D) DOPJUDQHE

9. **B**

10. In the given figure, P is 300 km eastward of O and Q is 400 km north of O. R is exactly in the middle of Q and P. The distance between Q and R is :

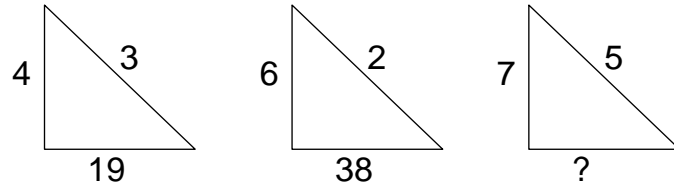
- (A) 250 km
(C) 500 km
- (B) $100\sqrt{3}$ km
(D) 125 km



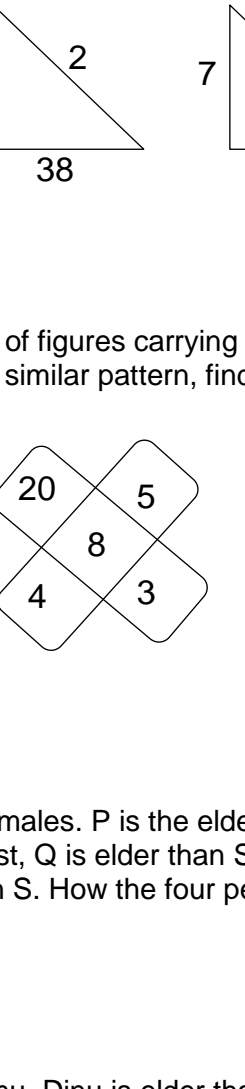
10. **A**

Directions (Questions 11 – 12):

In the following question, a set of figures carrying certain characters is given. Assuming that the characters in each set follow a similar pattern, find the missing character in each case.

11. 
- (A) 55 (B) 51
(C) 54 (D) 58
11. **C**

In the following question, a set of figures carrying certain characters is given. Assuming that the characters in each set follow a similar pattern, find the missing character in each case.

12. 
- (A) 3 (B) 10
(C) 15 (D) 60
12. **A**

13. P, Q, R and S are four males. P is the eldest in the group but he is not the poorest, R is the richest but not the eldest, Q is elder than S but he is not elder than P or R, P is richer than Q but he is not richer than S. How the four persons can be arranged in decreasing order of their age and money?

- (A) PQRS, RPSQ (B) PRQS, RSPQ
(C) PRQS, RSQP (D) PRSQ, RSPQ
13. **B**

14. Tannu is elder than Nimu. Dinu is elder than Nimu but younger than Tannu. Lalit is younger than both Nimu and Hari but Hari is younger than Nimu. Who is the youngest?

- (A) Tannu (B) Nimu
(C) Dinu (D) Lalit
14. **D**

15. If @ means \times , c means \div , % means $+$ and \$ means $-$, then $6 \% 12 \text{ C } 3 @ 8 \$ 3 = ?$

- (A) 37 (B) 35
(C) 39 (D) 33
15. **B**

Directions (Questions 16 – 17):

In the following series, replace the question mark (?) with the suitable option.

16. In the following series, replace the question mark (?) with the suitable option.
11, 29, 55, ?, 131
- (A) 110 (B) 81
(C) 89 (D) 78
16. **C**

17. In the following series, replace the question mark (?) with the suitable option.
 0, 4, 18, 48, ?, 180
 (A) 58 (B) 68
 (C) 84 (D) 100
17. **D**

Directions (Question 18): In this question, there is a certain relationship between two given words on one side of (::) and one word is given on another side of (::) while another word is to be found from the given alternatives, having the same relation with this word as the words of the given pair bear. Choose the correct alternative.

18. Tea : Leaves :: Coffee : ?
 (A) Plant (B) Leaves
 (C) Seeds (D) Stimulant
18. **C**
19. I am standing at the centre of a circular field. I go down South to the edge of the field and then turning the left I walk along the boundary of the field equal to three eights of its length. Then, I turn left and go right across to the opposite point on the boundary. In which direction am I from the starting point?
 (A) North west (B) North
 (C) South west (D) West
19. **C**
20. Immediately after leaving his house, Hareesh turned right and walked for 40 m. Then, he turned left and walked for 20 m. Then, he again took a left turn and walked for 30 m. There he met a friend and turned right to go to the coffee shop 20 m away. After having coffee, he walked back straight for 40 m in the direction he had come from. How far is he from his house?
 (A) 20 m (B) 0 m
 (C) 10 m (D) 40 m
20. **C**

Directions (Questions 21 – 23):

A five member research group is chosen from four mathematician A, B, C and D and four Physicians E, F, G and H. At least 3 mathematicians must be in the group. However,

- I. A refuses to work with D.
- II. B refuses to work with E.
- III. F refuses to work with G.
- IV. D refuses to work with F.

21.

A five member research group is chosen from four mathematician A, B, C and D and four Physicians E, F, G and H. At least 3 mathematicians must be in the group. However,
 I. A refuses to work with D.
 II. B refuses to work with E.
 III. F refuses to work with G.
 IV. D refuses to work with F.

If B and C are chosen, which of the following is definitely true?

- P : A is chosen,
- Q : D is chosen,
- R : Either F or G chosen.

- (A) P only (B) Q only
 (C) R only (D) Q and R only
21. **C**

22.

A five member research group is chosen from four mathematician A, B, C and D and four Physicians E, F, G and H. At least 3 mathematicians must be in the group.

However,

- I. A refuses to work with D.
- II. B refuses to work with E.
- III. F refuses to work with G.
- IV. D refuses to work with F.

If G is rejected, which other members could not work with the group?

- (A) A (B) B
 (C) D (D) Data inadequate
22. **D**

23.

A five member research group is chosen from four mathematician A, B, C and D and four Physicians E, F, G and H. At least 3 mathematicians must be in the group.

However,

- I. A refuses to work with D.
- II. B refuses to work with E.
- III. F refuses to work with G.
- IV. D refuses to work with F.

If H is chosen, which of the following must be true?

- P : A must be chosen
 Q : B must be chosen
 R : G must be chosen

- (A) P only (B) Q only
 (C) R only (D) P, Q and R
23. **B**

24. Six faces of a cube are numbered from 1 to 6, each face carrying one different number.

Further,

1. The face 2 is opposite to the face 6
2. The face 1 is opposite to the face 5
3. The face 3 is between the face 1 and the face 5
4. The face 4 is adjacent to the face 2

Which one of the following is correct?

- (A) The face 2 is adjacent to the face 3
 (B) The face 6 is between the face 2 and the face 4
 (C) The face 1 is between the face 5 and the face 6
 (D) None of the above
24. **A**

25. If – stands for +, + stands for –, x stands for ÷ and ÷ stands for x, the which of the following is correct.

- (A) $40 - 10 + 20 \times 10 \div 4 = 40$ (B) $10 - 8 \div 4 \times 8 + 9 = 5$
 (C) $31 + 5 \times 3 \div 4 - 9 = 21$ (D) $40 - 30 \times 10 + 5 \div 7 = 10$
25. **B**

26. A girl was born on September 6, 1970 which happen to be a Sunday. Her birthday would have fallen again on Sunday in
 (A) 1975 (B) 1977
 (C) 1981 (D) 1982
 26. **C**
27. The last day of a century can not be either
 (A) Monday (B) Wednesday
 (C) Tuesday (D) Friday
 27. **C**
28. In a particular code, 'IUIJT' means 'GREEN'. What does XLSQKA mean in the same code?
 (A) VIOLET (B) ORANGE
 (C) INDIGO (D) PURPLE
 28. **A**
29. In a certain language 'how many goals scored' is written as 5397, 'many more matches' is written as 982 and 'he scored five' is written as '163'. How is 'goals' written in that code language?
 (A) 5 (B) 7
 (C) 5 or 7 (D) Data inadequate
 29. **C**
30. If it is possible to make a meaningful word with the 1st, 4th, 7th and 11th letters of the word 'INTERPRETATION', which of the following will be the third letter of that word? If more than one such word can be made, give 'M' as the answer and if no such word can be formed, give 'X' as the answer.
 (A) T (B) X
 (C) R (D) M
 30. **D**
31. A says, 'If B gives me Rs 40 he will have half as much as C, but if C gives me Rs 40 then three of us will have the same amount. What is the total amount of money that A, B and C have among them?
 (A) 240 (B) 320
 (C) 360 (D) 420
 31. **C**

Directions (Question 32):

In this question, one of the rule given below has been applied to the set of numbers. Identify the correct rule which has been applied to set of numbers given below.

- I. Subtract twice the number from its square.
 II. Subtract square of the number from its cube.
 III. Add half of the number of its square.
 IV. Add three to the cube of a number.

32. 2, 5, 27.5
 (A) I (B) II
 (C) III (D) IV
 32. **C**
33. In an examination, a student attempted 15 questions correctly and secured 40 marks. If there were two types of questions i.e., of 2 marks and 4 marks, how many questions of 2 marks did he attempted correctly (No negative marks for wrongly or un attempted questions)?
 (A) 5 (B) 10

33. (C) 12 (D) 15
B
34. The number of boys in a class is four times the number of girls. Which one of the following numbers can not represent the total number of children in the class?
 (A) 5 (B) 16
 (C) 30 (D) 40
B
35. A 20 feet × 16 feet wall is to be laid with coloured tiles measuring 1 foot × 1 foot at its border. If the width of the border is 1 foot, how many tiles are there in the border?
 (A) 72 (B) 70
 (C) 68 (D) 64
C

Directions (Questions 36 – 37):

In the question below are given three statements followed by three conclusions numbered I, II and III. You have to take the given statements to be true even if they seem to be at variance from the 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.

36. Statements: Some towels are brushes. No brush is soap. All soaps are rats.
 Conclusions: I. Some rats are brushes.
 II. No rat is brush.
 III. Some towels are soaps.
 (A) None follows (B) Only either I or II follows
 (C) Only II follows (D) Only I and III follow
B
37. In the question below are given three statements followed by three conclusions numbered I, II and III. You have to take the given statements to be true even if they seem to be at variance from the 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.
- Statements: Some pens are books. All schools are books. Some colleges are schools.
 Conclusions: I. Some colleges are pens.
 II. Some pens are schools.
 III. Some colleges are books.
 (A) Only I and II follow (B) Only II and III follow
 (C) Only I and III follow (D) None of these
D

Directions (Questions 38 – 40):

Study the following information carefully and answer the given questions:
 A Business School with six Professors L, M, N, O, P and Q, has decide to implement a new scheme of course management. Each Professor has to coordinate one course and support another course. This semester, O's support course is Finance, while three others have it in coordinator's role. P and Q have Marketing as one of their subjects. Q coordinates Operations, which is a support course for both N and P. Finance and IT are L's subjects. Both L and O have same subjects. Strategy is a support course for only one of the Professors.

38.

Study the following information carefully and answer the given questions:

A Business School with six Professors L, M, N, O, P and Q, has decide to implement a new scheme of course management. Each Professor has to coordinate one course and support another course. This semester, O's support course is Finance, while three others have it in coordinator's role. P and Q have Marketing as one of their subjects. Q coordinates Operations, which is a support course for both N and P. Finance and IT are L's subjects. Both L and O have same subjects. Strategy is a support course for only one of the Professors.

Who coordinates of IT course?

- (A) L (B) N
(C) O (D) None of these

38.

C

39.

Study the following information carefully and answer the given questions:

A Business School with six Professors L, M, N, O, P and Q, has decide to implement a new scheme of course management. Each Professor has to coordinate one course and support another course. This semester, O's support course is Finance, while three others have it in coordinator's role. P and Q have Marketing as one of their subjects. Q coordinates Operations, which is a support course for both N and P. Finance and IT are L's subjects. Both L and O have same subjects. Strategy is a support course for only one of the Professors.

Which course is supported by M?

- (A) Operations (B) IT
(C) Strategy (D) Finance

39.

C

40.

Study the following information carefully and answer the given questions:

A Business School with six Professors L, M, N, O, P and Q, has decide to implement a new scheme of course management. Each Professor has to coordinate one course and support another course. This semester, O's support course is Finance, while three others have it in coordinator's role. P and Q have Marketing as one of their subjects. Q coordinates Operations, which is a support course for both N and P. Finance and IT are L's subjects. Both L and O have same subjects. Strategy is a support course for only one of the Professors.

Who among the following are coordinating the Finance course?

- (A) L and N (B) N and O
(C) L, M and N (D) M, N and O

40.

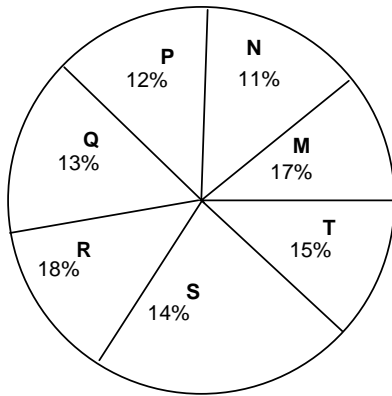
C

Directions (Questions 41 – 43):

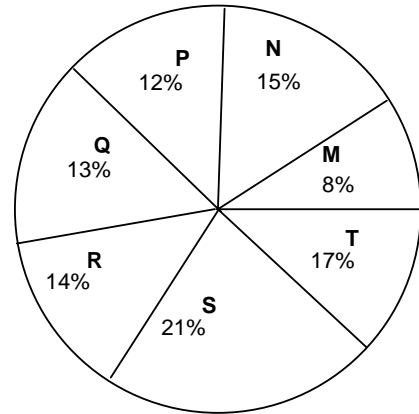
The following pie – charts show the distribution of students of graduate and post – graduate levels in seven different institutes – M, N, P, Q, R, S and T in a town.

DISTRIBUTION OF STUDENTS IN GRADUATE AND POST GRADUATE LEVELS IN SEVEN INSTITUTES – M, N, P, Q, R, S AND T

Total number of Students of Graduate Level = 27300



Total number of Students of Post – Graduate level = 24700

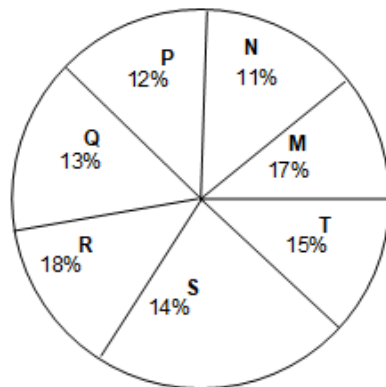


41.

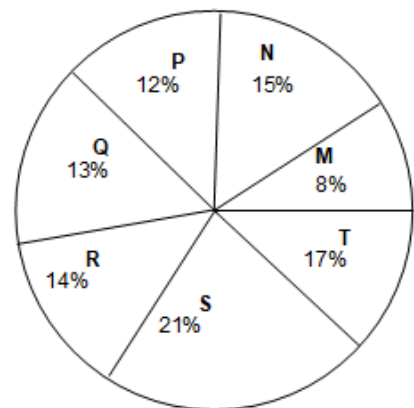
The following pie – charts show the distribution of students of graduate and post – graduate levels in seven different institutes – M, N, P, Q, R, S and T in a town.

DISTRIBUTION OF STUDENTS IN GRADUATE AND POST GRADUATE LEVELS IN SEVEN INSTITUTES – M, N, P, Q, R, S AND T

Total number of Students of Graduate Level = 27300



Total number of Students of Post – Graduate level = 24700



How many students of institutes M and S are studying at graduate level?

- (A) 7516
- (B) 8463
- (C) 9127
- (D) 9404

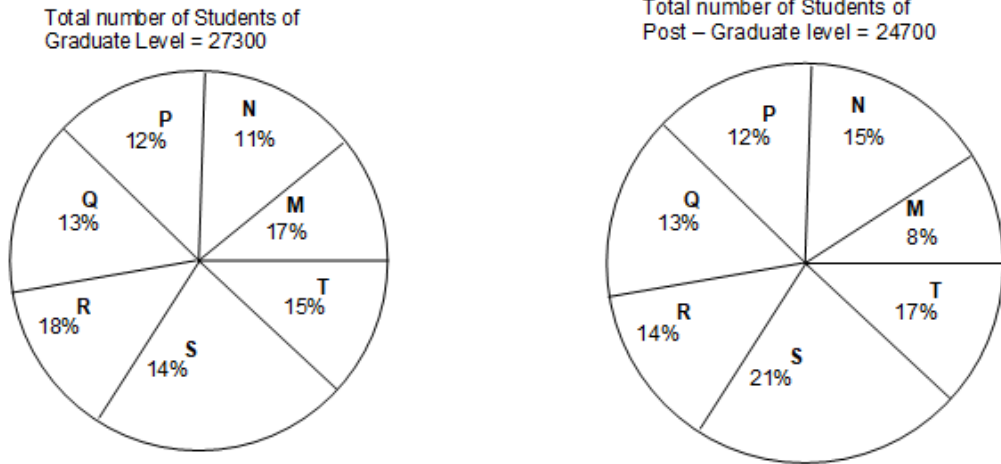
41.

B

42.

The following pie – charts show the distribution of students of graduate and post – graduate levels in seven different institutes – M, N, P, Q, R, S and T in a town.

DISTRIBUTION OF STUDENTS IN GRADUATE AND POST GRADUATE LEVELS IN SEVEN INSTITUTES – M, N, P, Q, R, S AND T



What is the total number of graduate and post graduate level students in institute R?

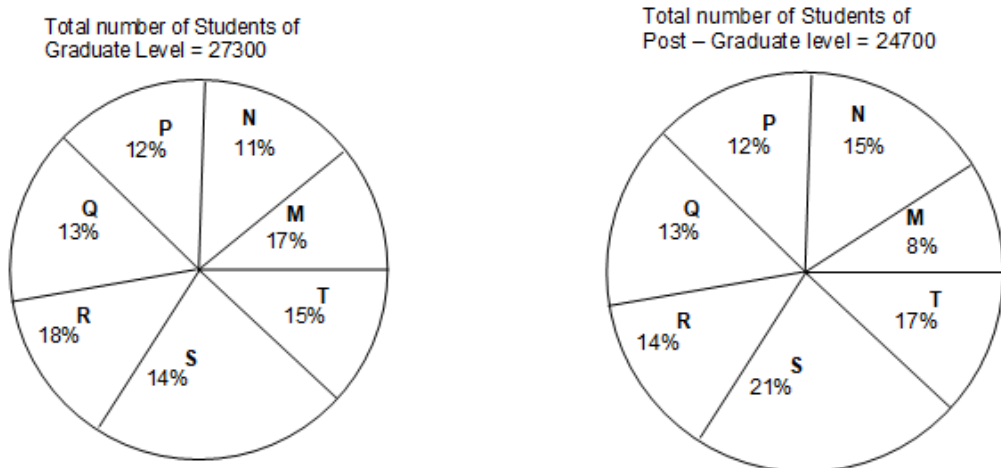
- (A) 8320
- (B) 7916
- (C) 9116
- (D) 8372

42. **D**

43.

The following pie – charts show the distribution of students of graduate and post – graduate levels in seven different institutes – M, N, P, Q, R, S and T in a town.

DISTRIBUTION OF STUDENTS IN GRADUATE AND POST GRADUATE LEVELS IN SEVEN INSTITUTES – M, N, P, Q, R, S AND T



What is the ratio between the number of students studying at post – graduate level from institute S and the number of students studying at graduate level from institute Q?

- (A) 13:19
- (B) 21:13
- (C) 13:8
- (D) 19:13

43. **D**

Directions (Questions 44 – 45):

In the question below, three statements, I, II and III are given. You are required to find out which of the given statements is / are sufficient to answer the question. Mark your answer accordingly.

44. On which day Suresh went to Punjabi Bagh, if week starts on Monday?
I. Suresh took leave on Wednesday
II. Suresh went to Punjabi Bagh the next day of the day his mother came to his house.
III. Suresh's mother came to his house neither on Monday nor Friday.
(A) II and III (B) I and II
(C) I and III (D) Even I, II and III together are not sufficient
44. **D**

In the question below, three statements, I, II and III are given. You are required to find out which of the given statements is / are sufficient to answer the question. Mark your answer accordingly.

45. Point D is in which direction with respect to point B?
I. Point A is to the West of point B, point C is to the North of point B, point D is to the South of point C.
II. Point G is to South of point D. Point G is 4 m from point B. Point D is 9 m from point B.
III. Point A is to the West of point B. Point B is exactly midway between point A and E. Point F is to the South of point E. Point D is to the West of point F.
(A) I and III (B) II and III
(C) All required (D) I and II
45. **A**

Directions (Questions 46 – 47):

Study the following table to answer the questions that are given below it.

EXPENDITURES OF A COMPANY (IN LAKH RUPEES) PER ANNUM OVER THE GIVEN YEARS

| Item of Expenditure / Year | Salary | Fuel and Transport | Bonus | Interest on Loans | Taxes |
|----------------------------|--------|--------------------|-------|-------------------|-------|
| 1998 | 288 | 98 | 3.00 | 23.4 | 83 |
| 1999 | 342 | 112 | 2.52 | 32.5 | 108 |
| 2000 | 324 | 101 | 3.84 | 41.6 | 74 |
| 2001 | 336 | 133 | 3.68 | 36.4 | 88 |
| 2002 | 420 | 142 | 3.96 | 49.4 | 98 |

46.

Study the following table to answer the questions that are given below it.

EXPENDITURES OF A COMPANY (IN LAKH RUPEES) PER ANNUM OVER THE GIVEN YEARS

| Item of Expenditure / Year | Salary | Fuel and Transport | Bonus | Interest on Loans | Taxes |
|----------------------------|--------|--------------------|-------|-------------------|-------|
| 1998 | 288 | 98 | 3.00 | 23.4 | 83 |
| 1999 | 342 | 112 | 2.52 | 32.5 | 108 |
| 2000 | 324 | 101 | 3.84 | 41.6 | 74 |
| 2001 | 336 | 133 | 3.68 | 36.4 | 88 |
| 2002 | 420 | 142 | 3.96 | 49.4 | 98 |

The ratio between the total expenditure on Taxes for all the years and the total expenditure on Fuel and Transport for all the years respectively is approximately:

- (A) 4:7 (B) 10:13

- (C) 15:18 (D) 5:8
 46. **B**
 47.

Study the following table to answer the questions that are given below it.

EXPENDITURES OF A COMPANY (IN LAKH RUPEES) PER ANNUM OVER THE GIVEN YEARS

| Item of Expenditure / Year | Salary | Fuel and Transport | Bonus | Interest on Loans | Taxes |
|----------------------------|--------|--------------------|-------|-------------------|-------|
| 1998 | 288 | 98 | 3.00 | 23.4 | 83 |
| 1999 | 342 | 112 | 2.52 | 32.5 | 108 |
| 2000 | 324 | 101 | 3.84 | 41.6 | 74 |
| 2001 | 336 | 133 | 3.68 | 36.4 | 88 |
| 2002 | 420 | 142 | 3.96 | 49.4 | 98 |

Total expenditure on all these items in 1998 was approximately what percent of the total expenditure in 2002?

- (A) 62% (B) 66%
 (C) 69% (D) 71%
 47. **C**
 48. What is the unit digit in the product $(3^{65} \times 6^{59} \times 7^{71})$?
 (A) 1 (B) 2
 (C) 4 (D) 6
 48. **C**
 49. A person was asked to state his age in years. His reply was, 'Take my age three years hence, multiply it by 3 and then subtract three times my age three years ago and you will know how old I am'. What was the age of the person?
 (A) 18 years (B) 20 years
 (C) 24 years (D) 32 years
 49. **A**
 50. On what dates of August, 1980 did Monday fall?
 (A) 4, 11, 18, 25 (B) 3, 10, 17, 24
 (C) 6, 13, 20, 27 (D) 9, 16, 23, 30
 50. **A**

Directions (Questions 51 – 52):

Read the information given below to answer the questions.

A, B, C, D, E, F, G and H want to have a dinner on a round table and they have worked out the following seating arrangements.

- i. A will sit beside C.
- ii. H will sit beside A.
- iii. C will sit beside E.
- iv. F will sit beside H.
- v. E will sit beside G.
- vi. D will sit beside F.
- vii. G will sit beside B.
- viii. B will sit beside D.

51.

Read the information given below to answer the questions.

A, B, C, D, E, F, G and H want to have a dinner on a round table and they have worked out the following seating arrangements.

- i. A will sit beside C.
- ii. H will sit beside A.
- iii. C will sit beside E.
- iv. F will sit beside H.
- v. E will sit beside G.
- vi. D will sit beside F.
- vii. G will sit beside B.
- viii. B will sit beside D.

Which of the following is wrong?

- (A) A will be to the immediate right of C
- (B) D will be to the immediate left of B
- (C) E will be to the immediate right of A
- (D) F will be to the immediate left of D

51. **C**

52.

Read the information given below to answer the questions.

A, B, C, D, E, F, G and H want to have a dinner on a round table and they have worked out the following seating arrangements.

- i. A will sit beside C.
- ii. H will sit beside A.
- iii. C will sit beside E.
- iv. F will sit beside H.
- v. E will sit beside G.
- vi. D will sit beside F.
- vii. G will sit beside B.
- viii. B will sit beside D.

Which of the following is correct?

- (A) B will be to the immediate left of F
- (B) H will be to the immediate right of A
- (C) C will be to the immediate right of F
- (D) B will be to the immediate left of H

52. **B**

Directions (Questions 53 – 54):

Each question given below has a set of three or four statements. Each set of statements is further divided into three segments. Choose the alternative where the third segment in the statement can be logically deduced using both the preceding two, but not just from one of them.

- 53. a. All good people are knights. All warriors are good people. All knights are warriors.
b. No footballers are ministers. All footballers are tough. Some ministers are players.
c. All pizzas are snacks. Some meals are pizzas. Some meals are snacks.
d. Some barkers are musk deer. All barkers are sloth bears. Some sloth bears are musk deer
- (A) a only
 - (B) b and c
 - (C) c only
 - (D) c and d

53. **D**

Each question given below has a set of three or four statements. Each set of statements is further divided into three segments. Choose the alternative where the third segment in the statement can be logically deduced using both the preceding two, but not just from one of them.

54. a. Ravens are black. Ravens are evil. All evil are black.
 b. Horses are faster than eagles. All eagles are hawks. Horses are faster than hawks.
 c. No priest is a saint. Peter is a priest. Peter is a saint.
 (A) a only (B) b only
 (C) c only (D) none of these
54. **D**

Directions (Question 55):

Study the following table and answer the question given below it.

Distribution of students according to professional courses

| S. No | Courses | | | | |
|-------|-----------------------|-------|------|---------|------|
| | | Arts | | Science | |
| | | Girls | Boys | Girls | Boys |
| 1. | Business Management | 25 | 45 | 25 | 65 |
| 2. | Type writing | 23 | 186 | 20 | 32 |
| 3. | Costing | 25 | 120 | 12 | 58 |
| 4. | Typewriting & costing | 12 | 100 | 3 | 5 |

55.

Distribution of students according to professional courses

| S. No | Courses | | | | |
|-------|-----------------------|-------|------|---------|------|
| | | Arts | | Science | |
| | | Girls | Boys | Girls | Boys |
| 1. | Business Management | 25 | 45 | 25 | 65 |
| 2. | Type writing | 23 | 186 | 20 | 32 |
| 3. | Costing | 25 | 120 | 12 | 58 |
| 4. | Typewriting & costing | 12 | 100 | 3 | 5 |

If 60% of boys and 70% of girls are successful in the courses taken by them, what is the combined pass percentage?

- (A) 54 % (B) 58 %
 (C) 62 % (D) 66 %
55. **C**

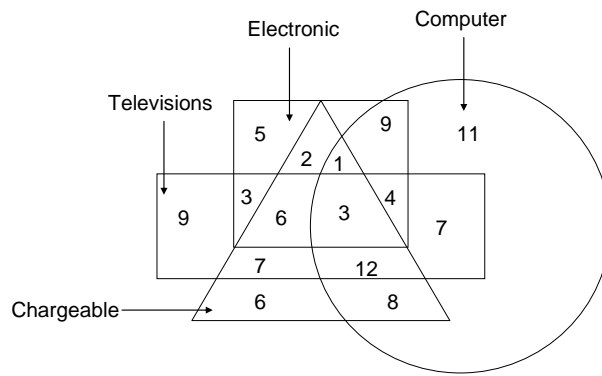
Directions (Question 56):

In a locality there are 60 vehicles that are parked. There are 2 types of vehicles i.e., 2 tyres and with 4 tyres. The total number of tyres in all the vehicles together is 210.

56. How many 2 tyres vehicles are there?
 (A) 15 (B) 30
 (C) 45 (D) 55
56. **A**

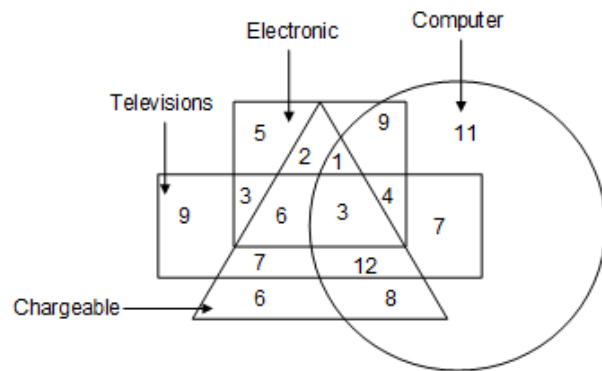
Directions (Questions 57 – 58):

In the figure below square represents goods which are electronic, rectangle represents televisions, circle represents computers, triangle represents chargeable.



57.

In the figure below square represents goods which are electronic, rectangle represents televisions, circle represents computers, triangle represents chargeable.



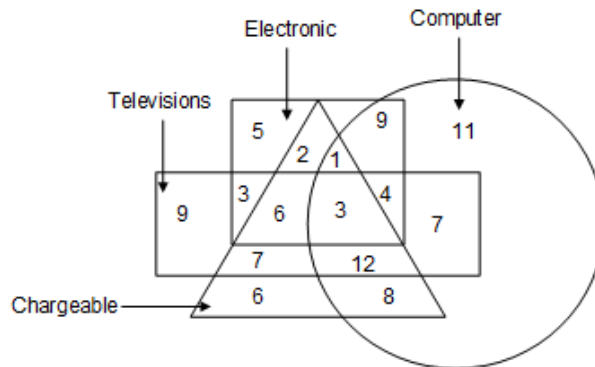
How many computers are chargeable which are electronic but not television?

- (A) 1
- (B) 4
- (C) 16
- (D) 24

57. **A**

58.

In the figure below square represents goods which are electronic, rectangle represents televisions, circle represents computers, triangle represents chargeable.



How many items in total are either electronics only or televisions only?

- (A) 3
- (B) 5
- (C) 9
- (D) 14

58. **D**

59. In the following series there is a term that does not follow the logic and is incorrect. Identify the term that is wrong.
3, 9, 18, 54, 108, 324, 486
(A) 324 (B) 486
(C) 108 (D) 54
59. **B**
60. In the following series, there is a '?' which signifies either the missing or the next term. Find the value of '?' in the following question.
A2E, C5H, E12K, G27N, ?
(A) I58Q (B) I77R
(C) J58R (D) J57Q
60. **A**

Directions (Questions 61 – 65):

Read the following information carefully and answer the questions that follow.

Six compounds are being tested for possible use in a new anti – poison, 'Sweet 'N' Deadly'.

- I. U is sweeter than V and more deadly than Z
- II. V is sweeter than Y and less deadly than Z
- III. W is less sweet than X and less deadly than U
- IV. X is less sweet and more deadly than Y.
- V. Y is less sweet and more deadly than U.
- VI. Z is sweeter than U and less deadly than W.

61.

Read the following information carefully and answer the questions that follow.

Six compounds are being tested for possible use in a new anti – poison, 'Sweet 'N' Deadly'.

- I. U is sweeter than V and more deadly than Z
- II. V is sweeter than Y and less deadly than Z
- III. W is less sweet than X and less deadly than U
- IV. X is less sweet and more deadly than Y.
- V. Y is less sweet and more deadly than U.
- VI. Z is sweeter than U and less deadly than W.

Which is the sweetest?

- (A) U (B) W
- (C) X (D) Z

61. **D**

62.

Read the following information carefully and answer the questions that follow.

Six compounds are being tested for possible use in a new anti – poison, 'Sweet 'N' Deadly'.

- I. U is sweeter than V and more deadly than Z
- II. V is sweeter than Y and less deadly than Z
- III. W is less sweet than X and less deadly than U
- IV. X is less sweet and more deadly than Y.
- V. Y is less sweet and more deadly than U.
- VI. Z is sweeter than U and less deadly than W.

Which of the following is / are both sweeter and more deadly than V?

- (A) Only U (B) Only W
- (C) Only Z (D) U and Z

62. **D**

63.

Read the following information carefully and answer the questions that follow.
Six compounds are being tested for possible use in a new anti – poison, 'Sweet 'N' Deadly'.
I. U is sweeter than V and more deadly than Z
II. V is sweeter than Y and less deadly than Z
III. W is less sweet than X and less deadly than U
IV. X is less sweet and more deadly than Y.
V. Y is less sweet and more deadly than U.
VI. Z is sweeter than U and less deadly than W.

Which of the following statement adds no new information about sweetness to the statements that precede it?

- (A) I (B) III
(C) IV (D) V

63. **D**

64.

Read the following information carefully and answer the questions that follow.
Six compounds are being tested for possible use in a new anti – poison, 'Sweet 'N' Deadly'.
I. U is sweeter than V and more deadly than Z
II. V is sweeter than Y and less deadly than Z
III. W is less sweet than X and less deadly than U
IV. X is less sweet and more deadly than Y.
V. Y is less sweet and more deadly than U.
VI. Z is sweeter than U and less deadly than W.

Which of the following is / are sweeter than Y and more deadly than W?

- (A) Only U (B) Only V
(C) Only Z (D) U and V

64. **A**

65.

Read the following information carefully and answer the questions that follow.
Six compounds are being tested for possible use in a new anti – poison, 'Sweet 'N' Deadly'.
I. U is sweeter than V and more deadly than Z
II. V is sweeter than Y and less deadly than Z
III. W is less sweet than X and less deadly than U
IV. X is less sweet and more deadly than Y.
V. Y is less sweet and more deadly than U.
VI. Z is sweeter than U and less deadly than W.

Which is the least deadly?

- (A) U (B) V
(C) W (D) Y

65. **B**

66. Each consonant in the word 'TIRADES' is replaced by the previous letter and each vowel is replaced by the next letter in the English alphabet and the new letters are rearranged alphabetically which of the following will be the fourth from the right end?

- (A) F (B) J
(C) Q (D) C

66. **B**

67. If the first and second letters in the word 'COMMUNICATIONS' were interchanged, also the third and the fourth letters, the fifth and sixth letters, and so on. Which letter would be the tenth letter counting from your right?

- (A) U (B) A
(C) T (D) N

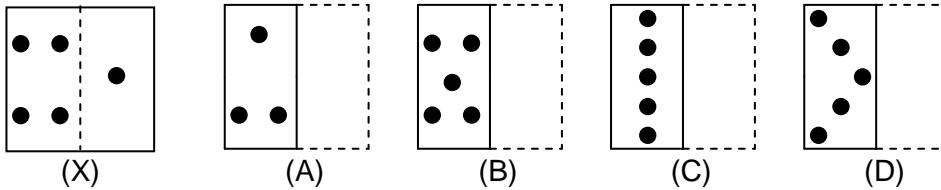
67. **D**

68. Tanishq is standing in the middle of a square field. He starts walking diagonally to north east. Then, in the midway he turns right and reaches the far end of the field. Then, he turns right and starts walking. In the midway, he again turns right and starts walking. In halfway, he turns to his left and reaches a new far end. In what direction is Tanishq now with respect to starting point?

- (A) North (B) South
(C) North west (D) South west

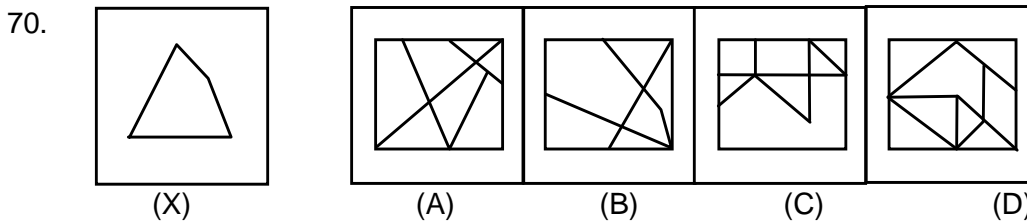
68. **D**

69. A square transparent sheet with a pattern is given (figure X). Figure out from amongst the four alternatives as to how the pattern would appear when the transparent sheet is folded at the dotted line.



69. **B**

Directions (Question 70): Find out the alternative figure which contains figure X as its part.



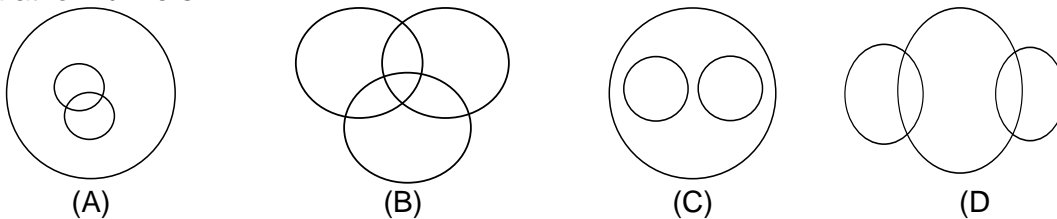
70. **B**

71. If > denotes +, < denotes -, + denotes ÷, ^ denotes x, - denotes =, x denotes > and = denotes <, choose the correct statement of the following:

- (A) $28 + 4^2 = 6^4 + 2$ (B) $13 > 7 < 6 + 2 = 3^4$
(C) $9 > 5 > 4 - 18 + 9 > 16$ (D) $9 < 3 < 2 > 1 \times 8^2$

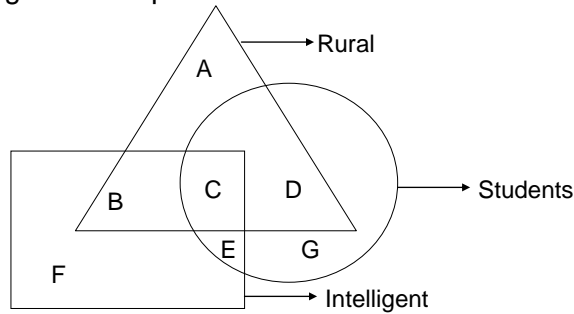
71. **C**

72. Which of the following combinations of circles best represents Athletes, Sprinters and Marathon runners?



72. **A**

73. Find the region that represents those rural students who are not intelligent?



- (A) C (B) B
(C) D (D) G

73. **C**

74. Two clocks are set correctly at 9 am on Monday. Both the clock gain 3 min and 5 min respectively in an hour. What time will the second clock register, if the first clock which gains 3 min in an hour shows the times as 27 min past 6 pm on the same day?

- (A) 6:27 pm (B) 6:45 pm
(C) 6:25 pm (D) 6:50 pm

74. **B**

75. A clock becomes 15 min fast every day. If it is made correct at 12 o'clock in the afternoon, then what time will it show at 4 o'clock in the morning?

- (A) 4:10 (B) 4:15
(C) 4:20 (D) 4:30

75. **A**

76. If Nose is used for hearing, Eye is used for smelling, Ear is used for eating, Hand is used for Walking, Feet are used for seeing / looking. Then, which of the organs will be used one by one by Rinki to walk to the restaurant, see the food then smell it and eat it?

- (A) hand, feet, eye, ear (B) feet, eye, nose, mouth
(C) ear, eye, feet, hand (D) hand, feet, ear, eye

76. **A**

77. Seema write with Red, Blue & Orange colour of pencils of her kit. Her friend Rita is colour blind. Rita intercepts/perceives colour Red as Orange, colour Yellow as Red, Colour Orange as Red and colour Blue as Orange. Then, which colour of pencil Seema should use from her kit so that her friend Rita intercepts/perceives it as Red?

- (A) Yellow (B) Orange
(C) Red (D) Blue

77. **B**

78. The students of a class are made to stand in rows. If 3 students are extra in a row, there would be 2 rows less. If 2 students are less in a row, there would be 2 rows more. Find the number of students in the class.

- (A) 120 (B) 140
(C) 143 (D) 110

78. **A**

79. The average of 13, 15, 22 and x lies between 16 and 22. Find the range of value of x.

- (A) $16 < x < 22$ (B) $14 < x < 38$
(C) $68 < x < 88$ (D) $22 < x < 3$

79. **B**

80. A and B are two sets such that A has 45 elements, B has 40 elements and $A \cup B$ has 70 elements, how many elements does $A \cap B$ have?

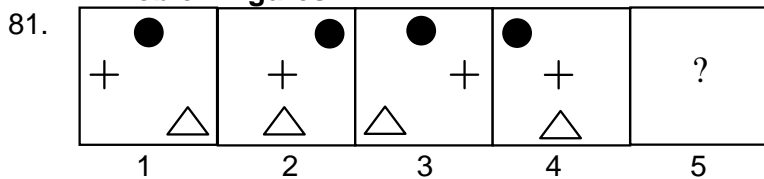
- (A) 35 (B) 30

80. (C) 25
D

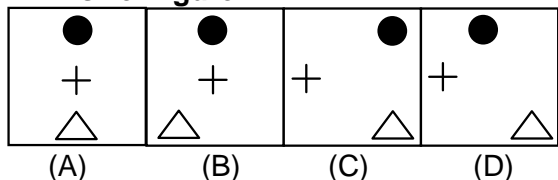
(D) None of these

Directions (Question 81): In the following question a set of figures related in some manner is given. Find the figure that comes in place of '?' and follows/continues the same relationship.

Problem figures

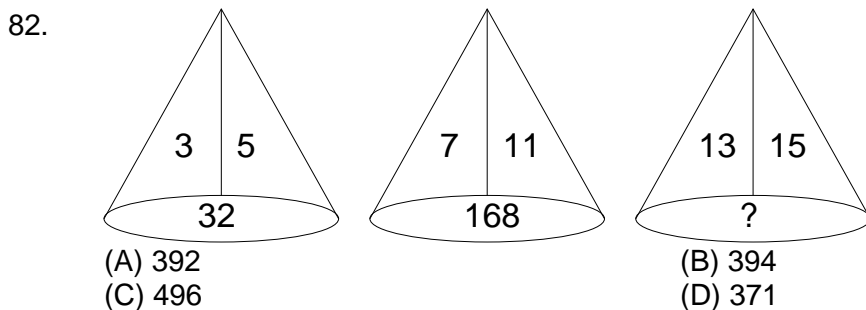


Answer figure



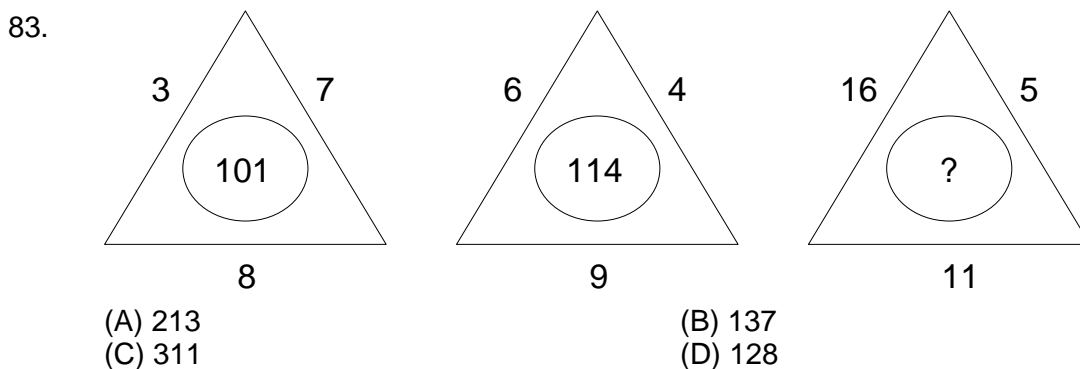
81. D

Directions (Questions 82 – 83): Find the missing character from the given alternatives.



82. A

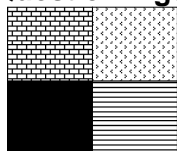
Find the missing character from the given alternatives.



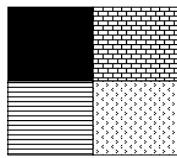
83. C

84. Choose the best possible water – image of the question figure from the given answer figures.

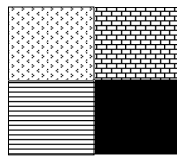
Question Figure:



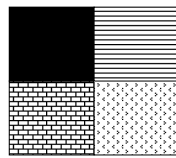
Answer Figure:



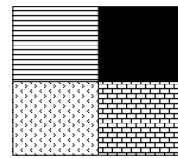
(A)



(B)



(C)

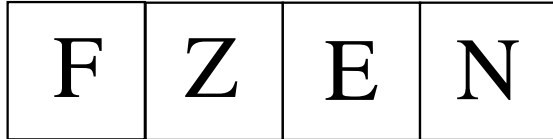


(D)

84. **C**

Directions (Question 85): In this question there are four figures given out of which three are similar or related in some manner. Find the figure which is odd one out.

85.



(A)

(B)

(C)

(D)

85. **C**

Directions (Questions 86 – 88):

Study the given information carefully and answer the question that follow.

- I. A, B, C, D, E, F and G are sitting on a wall and all of them are facing east.
- II. C is on the immediate right of D.
- III. B is at an extreme end and has E as his neighbour.
- IV. G is between E and F.
- V. D is sitting third from the south end.

86.

Study the given information carefully and answer the question that follow.

- I. A, B, C, D, E, F and G are sitting on a wall and all of them are facing east.
- II. C is on the immediate right of D.
- III. B is at an extreme end and has E as his neighbour.
- IV. G is between E and F.
- V. D is sitting third from the south end.

Who is sitting to the right of E?

- (A) A
- (B) C
- (C) D
- (D) None of these

86. **D**

87.

Study the given information carefully and answer the question that follow.

- I. A, B, C, D, E, F and G are sitting on a wall and all of them are facing east.
- II. C is on the immediate right of D.
- III. B is at an extreme end and has E as his neighbour.
- IV. G is between E and F.
- V. D is sitting third from the south end.

Which of the following pairs of people are sitting at the extreme ends?

- (A) AB
- (B) AE
- (C) CB
- (D) FB

87. **A**

88.

- Study the given information carefully and answer the question that follow.
- I. A, B, C, D, E, F and G are sitting on a wall and all of them are facing east.
 - II. C is on the immediate right of D.
 - III. B is at an extreme end and has E as his neighbour.
 - IV. G is between E and F.
 - V. D is sitting third from the south end.

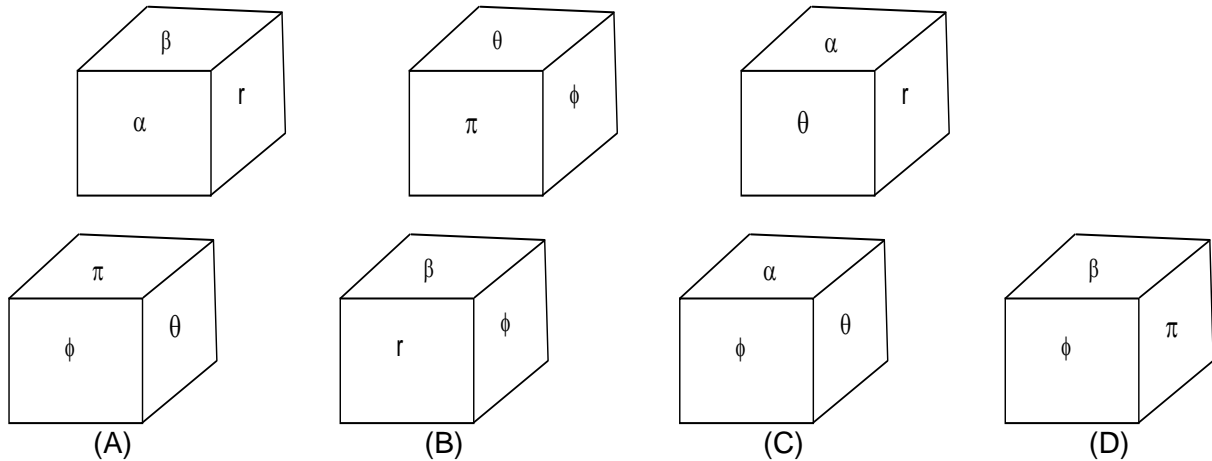
Immediately between which of the following pairs of people is D sitting?

- (A) AC (B) AF
(C) CE (D) CF

88. **D**

Directions (Question 89): In this question, three views of a cube are given. In the options another 4 views of the same cube are given, one of which is wrong. Identify the choice which contains the wrong view and mark it as your answer. The letter / numbers shown on the faces in the diagrams are used only to identify the respective faces in the diagrams, but are not printed or painted on the faces of the cubes.

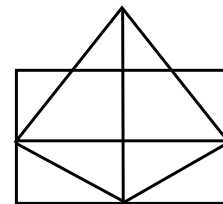
89.



89. **C**

90. Find the number of triangles in the given figure.

- (A) 11 (B) 13
(C) 15 (D) 17



90. **C**

91. The day on 18/09/1977 was Sunday. A couple was married on this date. How many marriage anniversaries would fall on Sunday in the next 15 years

- (A) 1 (B) 2
(C) 5 (D) 9

91. **B**

Directions (Questions 92 – 95):

Study the following information and answer the following questions.

A, B, C, D, E, G and I are seven friends who study in three different standards namely 5th, 6th and 7th such that not less than two friends study in the same standard. Each friend also has a different favourite subject namely History, Civics, English, Marathi, Hindi, Maths and Economics but not necessarily in the same order.

A likes Maths and studies in the 5th standard with only one other friend who likes Marathi. I studies

with two other friends. Both the friends who study with I like languages (here, languages include only Hindi, Marathi and English).

D studies in the 6th standard with only one person and does not like Civics. E studies with only one friend. The one who likes history does not study in 5th or 6th standard. E does not like language. C does not like English, Hindi or Civics.

92.

Study the following information and answer the following questions.

A, B, C, D, E, G and I are seven friends who study in three different standards namely 5th, 6th and 7th such that not less than two friends study in the same standard. Each friend also has a different favourite subject namely History, Civics, English, Marathi, Hindi, Maths and Economics but not necessarily in the same order.

A likes Maths and studies in the 5th standard with only one other friend who likes Marathi. I studies with two other friends. Both the friends who study with I like languages (here, languages include only Hindi, Marathi and English).

D studies in the 6th standard with only one person and does not like Civics. E studies with only one friend. The one who likes history does not study in 5th or 6th standard. E does not like language. C does not like English, Hindi or Civics.

Which combination represents E's favourite subject and the standard in which he studies?

(A) Civics and 7th (B) Economics and 5th

(C) Civics and 6th (D) History and 7th

92.

C

93.

Study the following information and answer the following questions.

A, B, C, D, E, G and I are seven friends who study in three different standards namely 5th, 6th and 7th such that not less than two friends study in the same standard. Each friend also has a different favourite subject namely History, Civics, English, Marathi, Hindi, Maths and Economics but not necessarily in the same order.

A likes Maths and studies in the 5th standard with only one other friend who likes Marathi. I studies with two other friends. Both the friends who study with I like languages (here, languages include only Hindi, Marathi and English).

D studies in the 6th standard with only one person and does not like Civics. E studies with only one friend. The one who likes history does not study in 5th or 6th standard. E does not like language. C does not like English, Hindi or Civics.

Who amongst the following studies in the 7th standard?

(A) G (B) C

(C) E (D) Either D or B

93.

A

94.

Study the following information and answer the following questions.

A, B, C, D, E, G and I are seven friends who study in three different standards namely 5th, 6th and 7th such that not less than two friends study in the same standard. Each friend also has a different favourite subject namely History, Civics, English, Marathi, Hindi, Maths and Economics but not necessarily in the same order.

A likes Maths and studies in the 5th standard with only one other friend who likes Marathi. I studies with two other friends. Both the friends who study with I like languages (here, languages include only Hindi, Marathi and English).

D studies in the 6th standard with only one person and does not like Civics. E studies with only one friend. The one who likes history does not study in 5th or 6th standard. E does not like language. C does not like English, Hindi or Civics.

Which of the following combinations is definitely correct?

- (A) I and Hindi
(C) C and Marathi
94. **C**
- (B) G and English
(D) B and Hindi
- 95.

Study the following information and answer the following questions.

A, B, C, D, E, G and I are seven friends who study in three different standards namely 5th, 6th and 7th such that not less than two friends study in the same standard. Each friend also has a different favourite subject namely History, Civics, English, Marathi, Hindi, Maths and Economics but not necessarily in the same order.

A likes Maths and studies in the 5th standard with only one other friend who likes Marathi. I studies with two other friends. Both the friends who study with I like languages (here, languages include only Hindi, Marathi and English).

D studies in the 6th standard with only one person and does not like Civics. E studies with only one friend. The one who likes history does not study in 5th or 6th standard. E does not like language. C does not like English, Hindi or Civics.

Which of the following subjects does G like?

- (A) Either Maths or Marathi
(C) Either Hindi or Civics
95. **B**
- (B) Either Hindi or English
(D) Either Hindi or Marathi

96. If + means divided by, – means add, x means minus and / means multiplied by, what will be the value of the following expression?

$$\left[\{ (17 \times 12) - (4 / 2) \} + (23 - 6) \right] / 0$$

- (A) infinite
(C) 118
96. **B**
- (B) 0
(D) 219

97. If Q means add to, J means multiplied by, T means subtract from and K means divide by, then $30 K 2 Q 3 J 6 T 5 = ?$

- (A) 18
(C) 31
97. **B**
- (B) 28
(D) 103

Directions (Questions 98 – 100):

A cube is coloured blue is one face, green on the opposite face, brown on one face and silver on a face adjacent to the brown face. The other two faces are left uncoloured. It is then cut into 125 smaller cubes of equal sizes. Now, answer the following questions based on the above information.

98.

A cube is coloured blue is one face, green on the opposite face, brown on one face and silver on a face adjacent to the brown face. The other two faces are left uncoloured. It is then cut into 125 smaller cubes of equal sizes. Now, answer the following questions based on the above information.

How many cubes have atleast one face painted green?

- (A) 1
(C) 16
98. **D**
- (B) 9
(D) 25

99.

A cube is coloured blue is one face, green on the opposite face, brown on one face and silver on a face adjacent to the brown face. The other two faces are left uncoloured. It is then cut into 125 smaller cubes of equal sizes. Now, answer the following questions based on the above information.

How many cubes are coloured silver on one face, blue or green on another face and have four uncoloured faces?

- (A) 8 (B) 10
(C) 12 (D) 16

99. **A**

100.

A cube is coloured blue on one face, green on the opposite face, brown on one face and silver on a face adjacent to the brown face. The other two faces are left uncoloured. It is then cut into 125 smaller cubes of equal sizes. Now, answer the following questions based on the above information.

How many cubes have all the faces uncoloured?

- (A) 24 (B) 36
(C) 48 (D) 64

100. **C**

ANSWERS

| | | | | | | | |
|-----|----------|-----|----------|-----|----------|------|----------|
| 1. | B | 2. | C | 3. | C | 4. | A |
| 5. | A | 6. | C | 7. | D | 8. | B |
| 9. | B | 10. | A | 11. | C | 12. | A |
| 13. | B | 14. | D | 15. | B | 16. | C |
| 17. | D | 18. | C | 19. | C | 20. | C |
| 21. | C | 22. | D | 23. | B | 24. | A |
| 25. | B | 26. | C | 27. | C | 28. | A |
| 29. | C | 30. | D | 31. | C | 32. | C |
| 33. | B | 34. | B | 35. | C | 36. | B |
| 37. | D | 38. | C | 39. | C | 40. | C |
| 41. | B | 42. | D | 43. | D | 44. | D |
| 45. | A | 46. | B | 47. | C | 48. | C |
| 49. | A | 50. | A | 51. | C | 52. | B |
| 53. | D | 54. | D | 55. | C | 56. | A |
| 57. | A | 58. | D | 59. | B | 60. | A |
| 61. | D | 62. | D | 63. | D | 64. | A |
| 65. | B | 66. | B | 67. | D | 68. | D |
| 69. | B | 70. | B | 71. | C | 72. | A |
| 73. | C | 74. | B | 75. | A | 76. | A |
| 77. | B | 78. | A | 79. | B | 80. | D |
| 81. | D | 82. | A | 83. | C | 84. | C |
| 85. | C | 86. | D | 87. | A | 88. | D |
| 89. | C | 90. | C | 91. | B | 92. | C |
| 93. | A | 94. | C | 95. | B | 96. | B |
| 97. | B | 98. | D | 99. | A | 100. | C |

HINTS AND SOLUTIONS

1. B

Sol. $10^3 + 10^2, 9^3 + 9^2, 8^3 + 8^2, 7^3 + 7^2, \underline{6^3 + 6^2}, 5^3 + 5^2$
 \therefore , Answer is 252

2. C

Sol. $(6 \times 5) + 10 = 40$
 $(40 \times 5) + 15 = 215$
 $(215 \times 5) + 20 = 1095$
 $(1095 \times 5) + 25 = 5500$

3. C

Sol. $4 + 5 = 9$
 $5 + 9 = 14$
 $9 + 14 = 23$
 $14 + 23 = 37$
 $23 + 37 = 60$

4. A

Sol. $21 + 22 = 2^3 + 1^3 + 2^3 + 2^3 = 25$
 $23 + 24 = 2^3 + 3^3 + 2^3 + 4^3 = 107$
 $11 + 12 = 1^3 + 1^3 + 1^3 + 2^3 = 11$

5. A

Sol. $14 + 5 - 18 \div 9 \times 2 = 14 + 5 - 2 \times 2$
 $= 19 - 4 = \underline{15}$

6. C

Sol. In the 1st word, the letter E is repeated and the code 4 is repeated. Hence, the code for E is 4.
 In the 4th word, the letter P is repeated and the code 3 repeated. Hence, the code for P is 3.
 For the 2nd and the 3rd words the letter O and the code 1 are common. Hence the code for O is 1. From the 2nd word, now it can be concluded that the code for M is 5.
 For the 1st and the 2nd words, the letter N and the code 6 are common. Hence, the code for N is 6.
 In the 2nd word, the letter C and the code 7 are left. Hence, the code for C is 7.
 Similarly, the letters and their corresponding codes can be determined.

| Letter | E | P | O | M | N | C | U | S | R | H | T | D |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|
| Code | 4 | 3 | 1 | 5 | 6 | 7 | * | 2 | 8 | & | 9 | 0 |

The code for PROTECT is 3819479.

7. D

Sol. The code for HORMONE is &185164.

8. B

Sol. The code for EMPEROR is 4534818.

9. B

Sol. Word: F A N T A S T I C
 Logic1: -1 -1 -1 -1 +1 +1 +1 +1 +1
 E Z M S B T U J D

Logic2: Reverse the order of first four and last four letters separately and leave the middle letter as it is.

Code: S M Z E B D J U T

In the same way we will get the code for the word DIRECTION as DQHCDOPJU.

10. A

Sol. Clearly, $PQ = \sqrt{OP^2 + OQ^2} = \sqrt{(300)^2 + (400)^2} = \sqrt{90000 + 160000} = 500$ km

Since, R is the midpoint of PQ, so $QR = \frac{1}{2} \times PQ = 250$ km.

11. C

Sol. Here, the pattern is as follows:

$$\text{As } 4^2 + 3 = 19$$

$$\text{and } 6^2 + 2 = 38$$

$$\text{Similarly, } 7^2 + 5 = 54$$

12. A

Sol. As, $16 - (3 + 4 + 8) = 1$

$$\text{and } 20 - (5 + 3 + 4) = 8$$

$$\text{Similarly, } 18 - (5 + 4 + 6) = 3$$

13. B

Sol. Decreasing order (agewise)

$$P > R > Q > S$$

Decreasing order (moneywise)

$$R > S > P > Q$$

14. D

Sol. According to the question:

$$\text{Tannu} > \text{Nimu}$$

$$\text{Tannu} > \text{Dinu} > \text{Nimu}$$

$$\text{Nimu} > \text{Hari} > \text{Lalit}$$

On arranging the above data, we get

$$\text{Tannu} > \text{Dinu} > \text{Nimu} > \text{Hari} > \text{Lalit}$$

Hence, Lalit is the youngest.

15. B

Sol. $\therefore 6 \% 12 \text{ C } 3 @ 8 \$ 3 = ?$

$$\Rightarrow 6 + 12 \div 3 \times 8 - 3 = ?$$

$$\Rightarrow 6 + 4 \times 8 - 3 = ?$$

$$\Rightarrow 6 + 32 - 3 = ?$$

$$\Rightarrow 38 - 3 = ?$$

$$\therefore ? = 35$$

16. C

Sol. The pattern is as follows:

$$3^2 + 2 = 11$$

$$5^2 + 4 = 29$$

$$7^2 + 6 = 55$$

$$9^2 + 8 = 89$$

$$11^2 + 10 = 131$$

$$\therefore ? = 89$$

17. D

Sol. The pattern is as follows:

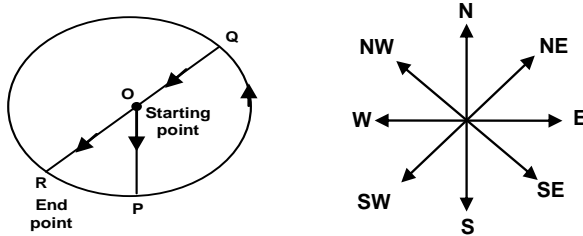
$$\begin{array}{cccccc}
 0 & 4 & 18 & 48 & 100 & 180 \\
 \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\
 1^2 \times 0 & 2^2 \times 1 & 3^2 \times 2 & 4^2 \times 3 & 5^2 \times 4 & 6^2 \times 5 \\
 \therefore ? = 5^2 \times 4 = 25 \times 4 = 100
 \end{array}$$

18. C

Sol. Latter is the original form of the former.

19. C

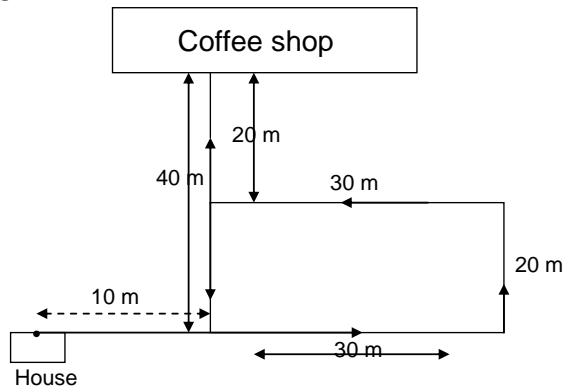
Sol. According to the question, the direction diagram will be as follows



From the above diagram, it is clear that I am in the south west direction from the starting point.

20. C

Sol.



$$\therefore \text{Required distance} = 40 - 30 = 10 \text{ m}$$

21. C

Sol. Mathematician : A, B, C, D

Physicians : E, F, G, H

According to the given condition, we can have below possible team:

ABCFH

ABCGH

BCDGH

From above possible teams, we can say statement (R) is definitely true.

22. D

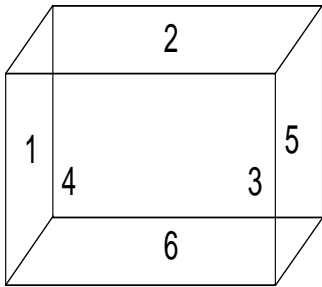
Sol. On the basis of only G we cannot find the answer.

23. B

Sol. Out of A and D only 1 mathematician can be chosen. So, if 3 mathematicians are chosen then they can be BAC or BDC.

24. A

Sol. As it is clear from the figure that face 2 is adjacent to face 3.



25. B

Sol. $40 + 10 - 20 \div 10 \times 4 = 42 \neq 40$

$10 + 8 \times 4 \div 8 - 9 = 5$

$31 - 5 \div 3 \times 4 + 9 = \frac{100}{3} \neq 21$

$40 + 30 \div 10 - 5 \times 7 = 8 \neq 10$

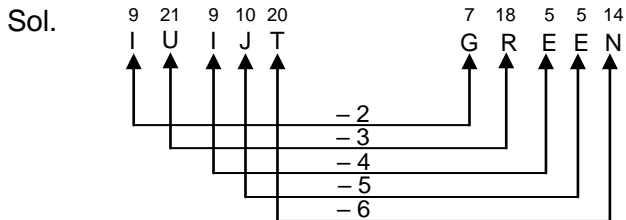
26. C

Sol. This date occurs on 1981 because multiple of seven odd days occur in between.

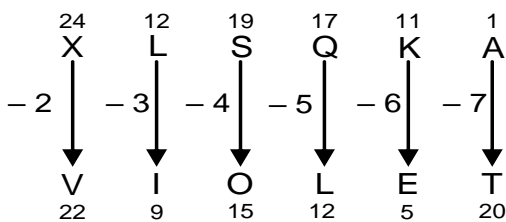
27. C

Sol. Last day of century can not be Tuesday, Thursday or Saturday.

28. A



Similarly,



29. C

Sol. how many goals scored = 5 3 9 7 ...i
many more matches = 9 8 2 ... ii
he scored five = 1 6 3 ...iii
 from eq. i and ii
 many \Rightarrow 9 ...iv
 from eq. i and iii
 scored \Rightarrow 3 ...v
 using eq. iv and v in eq. i, we get
 goals \Rightarrow 5 or 7

30. D

Sol. Two meaningful words are RITE and TIRE can be formed

31. C

Sol. Let A, B and C have Rs a, Rs b and Rs c respectively.

Then, according to given conditions

$$(b - 40) = \frac{1}{2} \times c \quad (i)$$

$$c - 40 = a + 40 = b \quad (ii)$$

Solving (i) and (ii), we get $a = 80$, $b = 120$, $c = 160$.

Therefore, total amount = Rs 360

32. C

Sol. Half of 2 added to $(2)^2$ gives us 5. Similarly we can get 27.5. Clearly rule III is applicable here.

33. B

Sol. Assume we have x questions of 2 marks and y questions of 4 marks.

$$\text{Then, } x + y = 15 \quad (i)$$

$$\text{and, } 2x + 4y = 40 \quad (ii)$$

Solving x and y , we get $x = 10$, $y = 5$

34. B

Sol. Assume we have x number of boys and y number of girls.

$$\text{Then, } x = 4y$$

$$\text{Total students} = x + y = 4y + y = 5y$$

\Rightarrow Number of students must be a multiple of 5

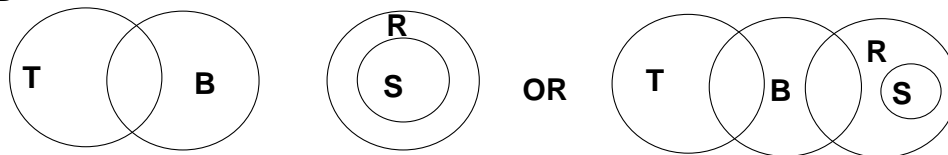
\Rightarrow Number can not be 16 as it is not a multiple of 5.

35. C

Sol. Total tiles = 4 (corner) + 18×2 (length) + 14×2 (breadth)
= $4 + 36 + 28 = 68$

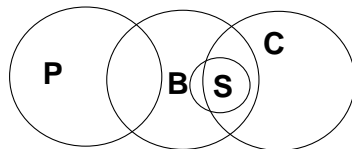
36. B

Sol.



37. D

Sol.



38. C

Sol. O's support course is Finance. Since L and O have the same subjects. So, O coordinates IT.

Now, Operations is a support course for both N and P. Also, Q coordinates Operations.

Since P and Q have Marketing as one of their subjects, so P coordinates Marketing which is a support course for Q. Since three professors, other than O, coordinate Finance, so each of the remaining three i.e., L, M and N coordinates Finance. So, L's support course is IT and M's support course is Strategy.

| Professor | L | M | N | O | P | Q |
|----------------|---------|----------|------------|---------|------------|------------|
| Coord. Course | Finance | Finance | Finance | IT | Marketing | Operations |
| Support course | IT | Strategy | Operations | Finance | Operations | Marketing |

O coordinates the IT course.

39. C

Sol. M's support course is Strategy.

40. C
Sol. L, M and N coordinate Finance.

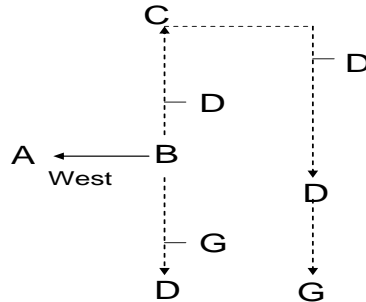
41. B
Sol. Students of institute M at graduate level = 17% of 27300 = 4641
Students of institute S at graduate level = 14% of 27300 = 3822
∴ Total number of students at graduate level in institutes M and S = 4641 + 3822 = 8463

42. D
Sol. Required number = (18% of 27300) + (14% of 24700) = 4914 + 3458 = 8372

43. D
Sol. Required ratio = $\frac{(21\% \text{ of } 24700)}{(13\% \text{ of } 27300)} = \frac{21 \times 24700}{13 \times 27300} = \frac{19}{13}$

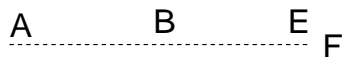
44. D
Sol. Statement I, II and III together are not sufficient as the required day can be anyone of Wednesday, Thursday, Friday and Sunday.

45. A
Sol. From the statements I and II.



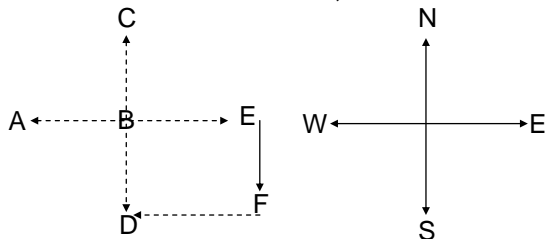
Clearly, points D and G can be anywhere on the dotted line.
Hence, exact direction of D cannot be determined.

From Statements II and III.



Point D can be anywhere on the dotted line. Hence, positions of G and D and their directions in respect of B cannot be determined.

From statements I and III,



Clearly, D is to the South of B.

46. B
Sol. Required ratio = $\frac{(83 + 108 + 74 + 88 + 98)}{(98 + 112 + 101 + 133 + 142)} = \frac{451}{586} = \frac{10}{13}$

47. C

Sol. Required percentage = $\left[\frac{(288 + 98 + 3.00 + 23.4 + 83)}{(420 + 142 + 3.96 + 49.4 + 98)} \times 100 \right] \%$
 $= \left(\frac{495.4}{713.36} \times 100 \right) \% \cong 69.45\%$

48. C

Sol. \therefore Unit digit in $3^{65} = (1 \times 3) = 3$
 Unit digit in $6^{59} = 6$
 Unit digit in $7^4 = 1$
 Unit digit in $7^{71} = (1 \times 3) = 3$
 \therefore Required digit = Unit digit in $(3 \times 6 \times 3) = 4$

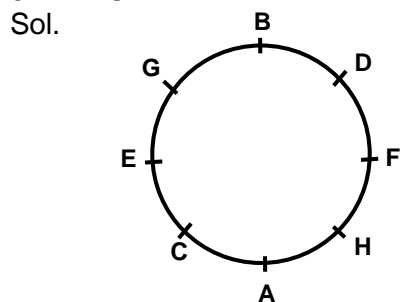
49. A

Sol. Let the present age of the person be x years.
 Then, $3(x + 3) - 3(x - 3) = x \Leftrightarrow (3x + 9) - (3x - 9) = x \Leftrightarrow x = 18$

50. A

Sol. First of all, we have to find the day on 1st August 1980.
 Now, 1900 yrs have 1 odd day
 79 yrs have 0 odd day
 7 months and 1 day
 $= 214$ days = 4 odd days
 Total number of odd days = $(1 + 4) = 5$
 So, it was Friday on 1st August, 1980 and 1st Monday of the month was on 4th and subsequent Mondays of the month were on 4th, 11th, 18th and 25th.

51. C



Clearly, E is not to immediate right of A.

52. B

Sol. Clearly, H will be to the immediate right of A.

53. D

Sol. The condition is fulfilled in both c and d statements.

54. D

Sol. The condition is not fulfilled in any of the statements.

55. C

Sol. Successful boys = $(60\% \text{ of } 611) = 367$
 Successful girls = $(70\% \text{ of } 145) = 102$
 Percentage of successful students = $\left(\frac{469}{756} \times 100 \right) = 62\%$

56. A

Sol. Assume, we have x number of 2 tyres vehicle and y number of 4 tyre vehicle

$x + y = 60$ (i)
 $2x + 4y = 210$ (ii)
 Solving (i) and (ii), we get $x = 15$ and $y = 45$
 Therefore, we have 15 vehicles of 2 tyre vehicle

57. A

Sol. The area common to triangle, circle and square but not with rectangle.

58. D

Sol. The area of square not common to any other and area of rectangle not common to any other
 $= 5 + 9 = 14$

59. B

Sol. The series is following a logic of $x^3, x^2, x^3, x^2, x^3, x^2$

60. A

Sol. $A \xrightarrow{B} C \xrightarrow{D} E \xrightarrow{F} G \xrightarrow{H} I$
 $2 \xrightarrow{\times 2+1} 5 \xrightarrow{\times 2+2} 12 \xrightarrow{\times 2+3} 27 \xrightarrow{\times 2+4} 58$
 $E \xrightarrow{FG} H \xrightarrow{IJ} K \xrightarrow{LM} N \xrightarrow{OP} Q$

61. D

Sol. The compounds can be arranged according to their taste and effectiveness as shown below:
 Taste (sweet): $Z > U > V > Y > X > W$
 Effectiveness (deadly): $X > Y > U > W > Z > V$
 From the above taste (sweet) ranking, we find that Z is the sweetest.

62. D

Sol. The compounds can be arranged according to their taste and effectiveness as shown below:
 Taste (sweet): $Z > U > V > Y > X > W$
 Effectiveness (deadly): $X > Y > U > W > Z > V$
 It is clear that both Z and U are sweeter and more deadly than V.

63. D

Sol. The compounds can be arranged according to their taste and effectiveness as shown below:
 Taste (sweet): $Z > U > V > Y > X > W$
 Effectiveness (deadly): $X > Y > U > W > Z > V$
 Statement V does not add any new information about the sweetness of drugs.

64. A

Sol. The compounds can be arranged according to their taste and effectiveness as shown below:
 Taste (sweet): $Z > U > V > Y > X > W$
 Effectiveness (deadly): $X > Y > U > W > Z > V$
 Compound U is sweeter than Y and more deadly than W.

65. B

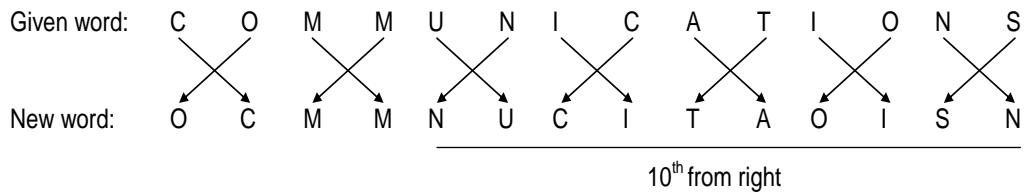
Sol. The compounds can be arranged according to their taste and effectiveness as shown below:
 Taste (sweet): $Z > U > V > Y > X > W$
 Effectiveness (deadly): $X > Y > U > W > Z > V$
 Compound V is the least deadly.

66. B

Sol. Original word: T I R A D E S
 I. Change S J Q B C F R
 II. Change B C F J Q R S

67. D

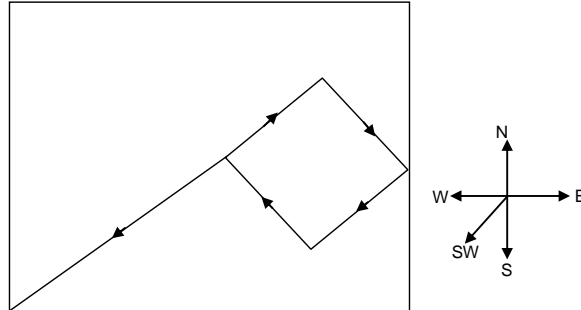
Sol. According to the question



Hence, required letter is N.

68. D

Sol. Path of Tanishq is as follows :



It is clear from the above figure that now Tanishq is in South west direction.

69. B

Sol. As per observation.

70. B

Sol. As per observation.

71. C

Sol. From option C

$$9 > 5 > 4 - 18 + 9 > 16$$

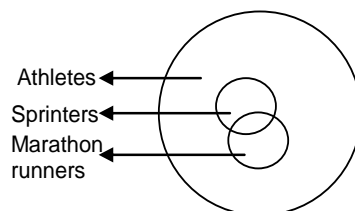
By interchanging the signs,

$$9 + 5 + 4 = 18 \div 9 + 16 \Rightarrow 18 = 18$$

Thus, option C is correct.

72. A

Sol. All sprinters and marathon runners are athletes and also some sprinter can be marathon runners. So, this relation can be expressed as given in option A.



73. C

Sol. Region D represents rural students who are not intelligent.

74. B

Sol. First clock gains = 3 min / h and second clock gains = 5 min / h

So, the difference in minutes between these two clocks in one hour = (5 - 3) min = 2 min

Total time from 9 pm to 6 pm on Monday = 9 h. So, first clock gains in 9 h = (9 x 3) min = 27 min and shows the time as 6:27 pm

Also, the second clock gain in 9 h = (9 x 5) min = 45 min and shows the time as 6:45 pm

75. A

Sol. Total time from 12 o'clock afternoon to 4 o'clock morning
 = 12 o'clock after noon to 12 o'clock night
 + 12 o'clock night to 4 o'clock morning
 = 12 + 4 = 16 h
 Since in 24 h (1 day), the clock becomes 15 min fast.

$$\therefore \text{In 16 h clock will be } \frac{15 \times 16}{24} = 10 \text{ min fast}$$

$$\therefore \text{Required time} = 4:00 + 0:10 = 4:10$$

76. A

Sol. According to given data, for walking she will use her hand, to see the food she will use her feet, for smelling she will use her eyes and she will use her ear for eating.

77. B

Sol. Rita perceives both colour Yellow and Orange as Red. But Seema do not have Yellow colour pencil. Hence, She will use Orange colour pencil from her kit.

78. A

Sol. Let number of the rows be x , and Number of the students in each row be y .

$$\therefore \text{Total number of the students} = xy$$

According to question,

$$(x - 2)(y + 3) = xy$$

$$\Rightarrow xy + 3x - 2y - 6 = xy$$

$$\Rightarrow 3x - 2y = 6 \quad \dots(i)$$

and

$$(x + 2)(y - 2) = xy$$

$$\Rightarrow xy - 2x + 2y - 4 = xy$$

$$\Rightarrow -2x + 2y = 4 \quad \dots(ii)$$

Solving equations (i) and (ii), we get $x = 10$ and $y = 12$

$$\therefore \text{Number of the students in the class} = xy = 10 \times 12 = 120.$$

79. B

$$\text{Sol. } \frac{13 + 15 + 22 + x}{4} = \text{Average}$$

$$\text{Average} = \frac{50 + x}{4}$$

$$16 < \frac{50 + x}{4} < 22$$

$$\Rightarrow 64 < 50 + x < 88$$

$$\Rightarrow 14 < x < 38$$

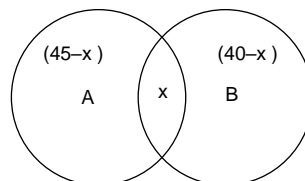
80. D

Sol. We know that

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

$$\Rightarrow 70 = 45 + 40 - n(A \cap B)$$

$$\therefore n(A \cap B) = 15.$$



$$45 - x + x + 40 - x = 70$$

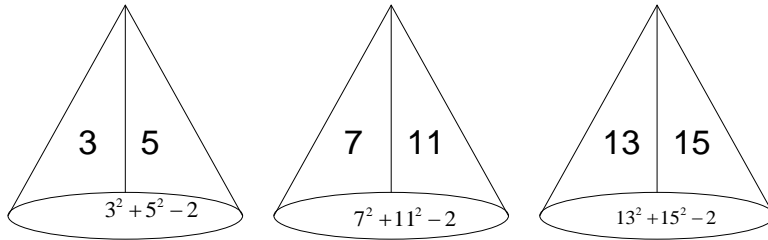
$$X = 85 - 70 = 15$$

81. D

Sol. Triangle, shifts center, left, right and so on in bottom row, circle shifts right, centre, left and so on in top row and cross shifts centre, right, left in middle row

82. A

Sol.



$\therefore ? = 392$

83. C

Sol. $101 = (3 \times 8) + (8 \times 7) + (7 \times 3)$

$114 = (6 \times 4) + (4 \times 9) + (6 \times 9)$

$? = (16 \times 5) + (5 \times 11) + (11 \times 16)$

$\therefore ? = 311$

84. C

Sol. As per observation.

85. C

Sol. As per observation.

86. D

Sol. C is to the right of D.

D is third from south. So, B will be at the extreme end from north because it should have E as its neighbour. G is between E and F. So, the sequence is:

B →

E →

G →

F → East

D →

C →

A →

G is sitting to the right of E.

87. A

Sol. A and B are sitting at the extreme ends.

88. D

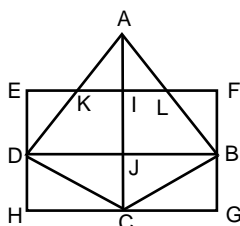
Sol. D is sitting between C and F.

89. C

Sol. From the figures it can be observed that 'π' is opposite to 'r', 'α' is opposite to 'φ', 'β' is opposite to 'θ'. Hence, choice C is wrong as 'α' is adjacent to 'φ' in option C.

90. C

Sol.



The figure may be labelled as shown.

The simplest triangles are AKI, AIL, EKD, LFB, DJC, BJC, DHC and BCG, i.e., 8 in number.

The triangles composed of two components each are AKL, ADJ, AJB and DBC *i.e.* 4 in number.

The triangles composed of the three components each are ADC and ABC *i.e.* 2 in number.

There is only one triangle *i.e.* ADB composed of four components.

Thus, there are $8 + 4 + 2 + 1 = 15$ triangles in the figure.

91. B

Sol. This date occurs on Sunday in 1983 and 1988 because 7 or multiple of 7 odd days occur in between.

92. C

Sol.

| Friends | Standard | Subject |
|---------|----------|-----------------|
| A | V | Maths |
| B | VII | Hindi / English |
| C | V | Marathi |
| D | VI | Economics |
| E | VI | Civics |
| G | VII | Hindi / English |
| I | VII | History |

E's favourite subject is Civics and he studies in 6th standard.

93. A

Sol. G studies in 7th standard.

94. C

Sol. C and Marathi is definitely a correct combination.

95. B

Sol. G likes either Hindi or English.

96. B

Sol. Using the correct symbols, we have:

$$\text{Given expression} = \left[\{(17 - 12) + (4 \times 2)\} \div (23 + 6) \right] \times 0 = 0$$

97. B

Sol. Using the correct symbols, we have:

$$\text{Given expression} = 30 \div 2 + 3 \times 6 - 5 = 15 + 18 - 5 = 28$$

98. D

Sol. Number of cubes with atleast one face painted green = $4 + 12 + 9 = 25$.

99. A

Sol. Number of cubes with silver on one face, blue or green on another face and have four uncoloured faces = $6 + 2 = 8$

100. C

Sol. Number of cubes with all the faces uncoloured = $9 + 9 + 27 + 3 = 48$