Time : 45 Minutes **Max. Marks : 50**

Instructions for Candidates

Read the following instructions carefully before you answer the questions :

1. Answers are to be given on a separate answer-sheet.

2. Write your eight-digit Roll Number very clearly on the test-booklet and answer-sheet as given in your letter / admission card.

3. Write down the Booklet Number in the appropriate box on the answer sheet.

4. There are 50 questions in this test. All are compulsory.

5. Please follow the instructions for marking the answers given on the answer sheet.

6. For questions 1 – 50, put a cross mark (X) on the number of the correct alternative on the answer-sheet against the corresponding question number.

7. If you do not know the answer to any question, do not spend much time on it and pass on to the next one. Time permitting, you can come back to the questions, which you have left in the first instance and try them again.

8. Since the time allotted for this question paper is very limited you should make the best use of it by not spending too much time on any one question.

9. Rough work can be done anywhere in the booklet but not on the answer sheet/loose paper.

10. Every correct answer will be awarded one mark.

11. Please return the Test-booklet and answer-sheet to the invigilator after the test.

1. Select the correct number that is missing in the number series given below :
    214, 265, 367, ?, 724
    (1) 520   (2) 501
    (3) 525   (4) 571

2. Select the correct alphabet number that is missing in the alphabet-number series given below :
    NAJ31, BEF28, RAM31, ?, YAM31
    (1) RPA31   (2) PRA30
    (3) RPA30   (4) PAR31

3. P + Q means P is the father of Q; P − Q means P is the wife of Q; P × Q means P is the brother of Q. Which of the following means A is the maternal uncle of D ?
    (1) A × B − C + D   (2) D × C − B × A
    (3) A × C + B − D   (4) A − C × B + D

4. Select from the alternatives two signs which need to be interchanged to make the following equation correct.
    $36 \div 12 \times 6 + 9 - 6 = 38$
    (1) − and ×   (2) ÷ and ×
    (3) − and +   (4) ÷ and +

5. According to a certain code, '=' means '>' '−' means '+' and '+' means '−'. If a, b and c are positive integers and a = b = c, then which of the following is true ?
    (1) b = a + c   (2) ac = b²
    (3) a − c = 2b   (4) ab = c²

6. Find the correct group of letters in place of '?' in the following series.
    FNHLJ, WOUQS, BNEKH, ?, DTHPL
    (1) N B K E H   (2) N V P T R
    (3) N F L H J   (4) N D R Z V

7.
    (1) 13   (2) 14
    (3) 12   (4) 18

8.
    (1) 14   (2) 16
   (3) 15   (4) 11

9. Two faces of a cube are given below, which number will be opposite 3?
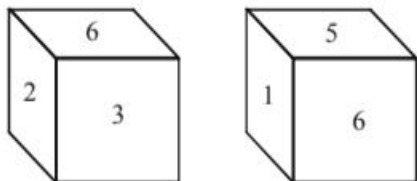
    (1) 1   (2) 5
    (3) 4   (4) 2

10. A, B and C together can complete a work in 'x' days. How many days would B alone take to complete the work?
    Statements :
    I.   C can complete the work in half the number of days taken by A.
    II. B can complete the work in half the number of days taken by A and C together.
    III. A and C together can complete the work in 'z' days.
    (1) Both I and II and required
    (2) I alone is sufficient
    (3) II and III taken together are sufficient
    (4) Either II or III is sufficient

11. A boat travels in a stream from A to B and then from B to A. What is the speed of the boat in still water?
    Statements :
    I.   The speed of the boat in still water is 2 km/h more than the speed of the current.
    II. The speed of the current is 1 km/h more than the speed of the boat.
    III. Boat covers the distance of y kilometres between A and B downstream and upstream in x hours.
    (1) All of I, II and III are required
    (2) Both II and III are required
    (3) I and III taken together are sufficient
    (4) Either I and II together or II and III together are sufficient

12. How many triangles are there in the following figure ?
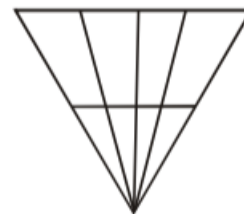
    (1) 20   (b) 18
    (3) 22   (d) 17

13. There are two statements given below as premises, which support the conclusion suggested in the answer options. You may select the conclusion that makes the whole argument valid :
    Statements :
    I.   No film actors are Cricketers.
    II. Some Cricketers are poets.
    (1) Therefore, some poets are film actors.
    (2) Therefore, some poets are not film actors.
    (3) Therefore, all poets are film actors.
    (4) Therefore, all film actors are poets.

14. Find the missing term (?) in the following series :
    2, 6, 30, 260, ?
    (1) 470   (2) 510
    (3) 630   (4) 3130

15. One term in the following number series is wrong. Find out the wrong term.

2, 6, 18, 82, 650

(1) 2   (2) 18

(3) 82   (4) 650

16. If RIR is coded as IRI then MUM is coded as

(1) NFN   (2) UMU

(3) UNU   (4) MFM

17. if FAST is coded as 798 and LAST is coded as 906 then BUSY is coded as

(1) 17599   (2) 1431

(3) 952   (4) 948

18. Six students A, B, C,D, E and F are in a class, A and B are from Town and C, D, E and F are from village. D and F are studious while others are casual. A, C, D are girls and B, E, F are boys. Who is the studious girl from village ?

(1) C   (2) D

(3) E   (4) F

19. Read the following information carefully and answer the questions given below it.

(A) Gopal is shorter than Ashok but taller than Kunal

(B) Navin is shorter than Kunal

(C) Jayesh is taller than Navin

(D) Ashok is taller than Jayesh

Who among them is the tallest ?

(1) Gopal   (2) Ashok

(3) Kunal   (4) Navin

20. Five persons are standing in a line. One of two persons at the extreme ends is a professor and the other is businessman. An advocate is standing to the right of a student. An author is to the left of the businessman. The student is standing between the professor and the advocate. Counting from the left, the advocate is at which place.

(1) 1st (2) 2nd

(3) 3rd (4) 5th

Directions (Qs. 21 - 24) : *A code language has been used to write the words in capital letters in English in Column I as Greek letters in Column II. Greek letters in Column II do not appear in the same order as letters in Column I. Decode the language and choose the correct code for the word given in each question from amongst the alternatives provided.*

Column-I	Column-II
CLEAR	γβωπθ
VIEW	νεγδ
TURN	ηρπσ
BUTTER	σρασπγ
OILY	δλθμ
WRITE	γπσνδ
VOWEL	νλεγθ

21. LIVER

(1) νηλμπ   (2) δγθπε

(3) ρσωεν   (4) αβδγη

22. TROUBLE

(1) ναβδγηλ   (2) νσωδγθε

(3) δγηλωεν   (4) σλρπαγθ

23. BROWN

(1) ωενλω   (2) ωδπρν

(3) απλην   (4) πρβνε

24. CYCLE

(1) βθγμβ   (2) βμβνπ

(3) πρπεω   (4) πλβνπ

Directions (Qs. 25 - 28) : *Read the following information and answer the questions that follow : P, Q, R, S, T, V and W are seven members of a family. Each of them has a different profession-Lawyer, Chartered Accountant (CA), Engineer, Teacher, Doctor, Architect and Pharmacist. There are three female members. No lady is either Pharmacist or Chartered Accountant. Each of them has a different monthly income. The Chartered Accountant (CA) earns the most. S, the engineer, earns less than V, the doctor. R, the teacher earns more than P and less than S. W's wife earns the least. T is an unmarried lady lawyer and she earns less than P and more than only Q. The pharmacist's income is not the lowest.*

25. Which of the following pairs of professional represents the professions of husband and wife ?

(1) Pharmacist, Architect

(2) Chartered Accountant, Architect

(3) Engineer, Pharmacist

(4) Chartered Accountant, Engineer

26. Which of the following statements is false ?

(1) The Architect earns more than the Lawyer

(2) The Teacher earns less than the Engineer

(3) The Doctor earns more than the Engineer

(4) The Pharmacist earns more than the Lawyer

27. What is P's profession?

(1) Pharmacist   (2) Lawyer

(3) Teacher   (4) None of the above

28. Which of the following represents the three female members of the family ?

(1) PTQ   (2) TRQ

(3) VTQ   (4) Data inadequate

29. Which of the following Venn diagram correctly represents Ocean, Indian Ocean, Pacific Ocean and Mariana Trench ?
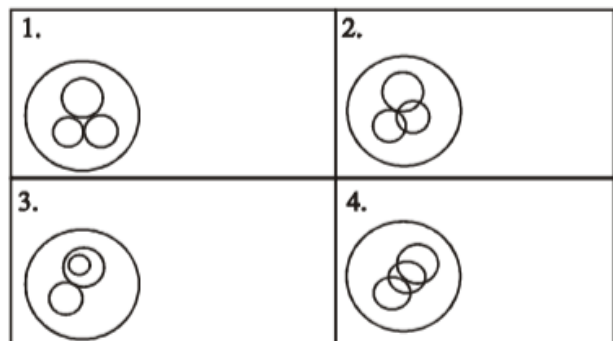
30. If RAJASTHAN = 9R17J8L19H13 in a coded language, then what is the encrypted form of the MANIPUR in the same language ?
   (1) 14R13H11G9
   (2) 13M14W11B9
   (3) 13R14J11F9
   (4) 14M13V11J9

31. What is the next number in the series 7, 23, 55, 109, ...
   (1) 199
   (2) 189
   (3) 191
   (4) 209

32. Find out the missing number in the second figure on the basis of numbers arranged in the first figure.
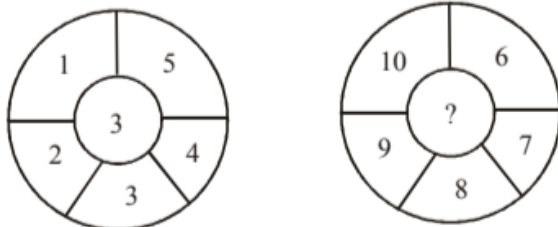
   (1) 30
   (2) 58
   (3) 160
   (4) 32

Directions (Qs. 33 - 37) : *In the Venn diagram given below, sample data of a small town having total population of 500 is provided, the square represents persons form urban areas, the triangle represents women, the circle represents persons who are working and the rectangle represents the persons who are educated. Number given in the diagram represents the number of persons.*
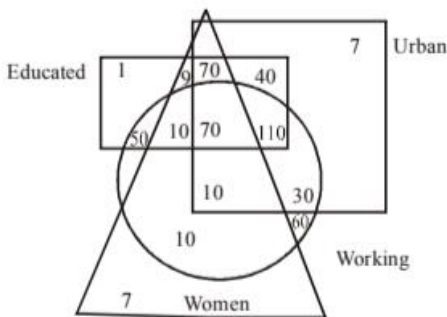

33. If urban population is 350 find out the non educated non working urban females ?
   (1) 13
   (2) 10
   (3) 9
   (4) 20

34. Find out the urban males who are educated but not working.
   (1) 110
   (2) 40
   (3) 30
   (4) 7

35. If rural population is 150, then how many non working rural males who are not educated ?
   (1) 5
   (2) 1
   (3) 6
   (4) 3

36. Find out the total non-working females but those are educated.
   (1) 80
   (2) 79
   (3) 51
   (4) 19

37. Find out the total rural male population ?
   (1) 111
   (2) 187
   (3) 180
   (4) 114

38. Select the best alternatives. Crime : Police :: Flood : ?
   (1) Dam
   (2) River
   (3) Rain
   (4) Reservoir

39. When the given sheet of paper (X) is folded to make a cube, choose the cube that may be formed. After that, answer the question accordingly.

   (X)

   (1)   (2)   (3)   (4)
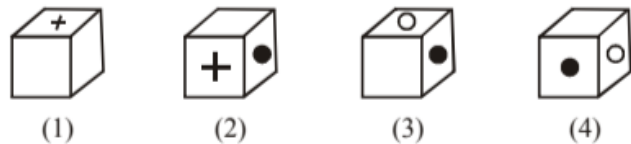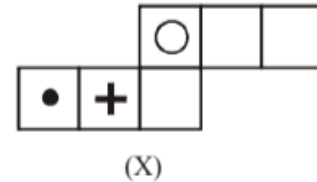
   (1) 1 only
   (2) 1,2 and 3 only
   (3) 2 and 3 only
   (4) 1, 2, 3 and 4

40. In the following diagram, there are four inter locked figures of a circle, a square, a triangle and a rectangle representing number of students passing in English, Maths, Science and Hindi, respectively. Different regions of the diagrams are also lettered form A through Q.
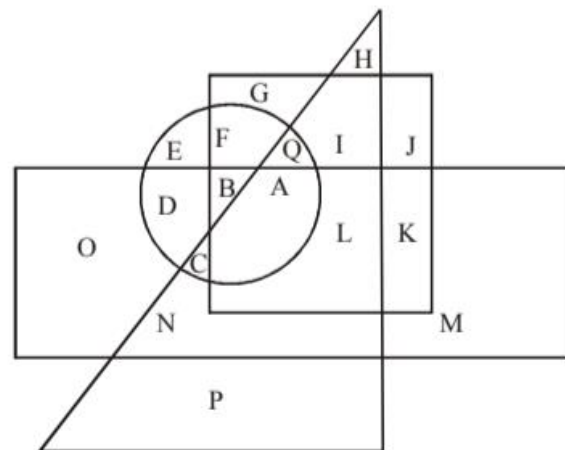
Now consider the following statements :
STATEMENTS :
I. There is no letter that represents a student who passed in all the four subjects.
II. There are only two letters that represent a student who passes on three subject only.
Which of the above statements is/are correct ?
   (1) I only
   (2) II only
   (3) Both I and II
   (4) Neither I and II

41. What is 'X' in the following table?

7	2	19	3	5
6	4	X	3	5
8	5	24	7	4

(1) 16   (2) 17
(3) 18   (4) 21

42. Consider the question and two statements that follow :
What is the total cost of one pen, one pencil and 1 note book ?
STATEMENTS :
I. The total cost of 5 pen, 6 pencils and 7 notebooks is ` 178
II. The total cost of 6 pens, 4 pencils and 2 notebooks is ` 124
Which one of the following is correct ?
(1) Statement I alone is sufficient to answer the question.
(2) Statement II alone is sufficient to answer the question.
(3) Statement I and II together are sufficient to answer the question.
(4) Both statements are not sufficient to answer the question.

43. Which one of the following differs from the rest ?
(1) MGDLFC   (2) JQVIPU
(3) ZUBXTA   (4) DYSCXR

44. Which one of the following fits inside the bracket ?
714 ( ) 65 if 953 (RVXYS) 28
(1) UWZSR   (2) UWZRS
(3) TZWVU   (4) TZWUV

45. If 'X' was born on December 6, 1983 and 'Y' on February 4, 1984, then when will 'Y' be half in age as compared to 'X'?
(1) April 4, 1984   (2) April 6, 1984
(3) April 5, 1984   (4) April 8, 1984

46. Choose the correct alternatives. Famine : Hunger : : War : _____
(1) Enmity   (2) Insecurity
(3) Destruction   (4) Infantry

47. Five persons P, Q, R, S and T are sitting in a row. Q in between P and T. To find who among them is in the middle, which of the following information given in the following statements is/are sufficient ?
STATEMENTS :
I. P is left of Q and right of S.
II. R is at the right end.
Select the correct answer using the code given below.
(1) I only   (2) II only
(3) Either I or II   (4) Both I and II

48. Certain blank spaces are left in the following series. Which is the group of letters given below, if put in the blank spaces in sequence, will complete the series ?
_ ab _ a _ ba _ ab _ _ ab _
(1) bbaabbb   (2) babaaaa
(3) abaaaba   (4) aaaaaaa

49. If the letters of the word 'BLUE' are arranged according to dictionary, what is the position of the word 'UBLE'?
(1) 19   (2) 20
(3) 21   (4) 22

50. All except one that does not belong to the same group. Which one is that ?

(1)
+	^	^
O	+	^
O	^	O

(2)
&	*	*
#	#	&
*	&	&

(3)
#	@	@
#	~	@
~	~	@

(4)
/	/	=
=	/	=
<	>	=

ANSWER KEY																			
1	(1)	6	(1)	11	(3)	16	(2)	21	(2)	26	(1)	31	(3)	36	(2)	41	(3)	46	(3)
2	(3)	7	(1)	12	(1)	17	(2)	22	(4)	27	(1)	32	(2)	37	(1)	42	(4)	47	(4)
3	(1)	8	(3)	13	(2)	18	(2)	23	(3)	28	(4)	33	(1)	38	(3)	43	(3)	48	(4)
4	(4)	9	(1)	14	(4)	19	(2)	24	(1)	29	(3)	34	(2)	39	(4)	44	(4)	49	(2)
5	(1)	10	(4)	15	(3)	20	(3)	25	(2)	30	(4)	35	(4)	40	(4)	45	(1)	50	(4)

Hints & Explanations

1. **(1)**

$$214 \quad 265 \quad 367 \quad \boxed{520} \quad 724$$
$$+51\times1 \quad +51\times2 \quad +51\times3 \quad +51\times4$$

2. **(3)** Given alphabet number series is :

NAJ 31, BEF 28, RAM 31, ?, YAM 31

Re-write the above series by reversing the order of alphabets as

JAN 31, FEB 28, MAR 31, ? MAY 31

∵ First word of each alphabet number is the name of month and digits show the number of days in their respective month.

∴ After MAR and before MAY, APR will come and it has 30 days.

So, the answer is RPA 30.

3. **(1)** A × B – C + D

$$\boxed{A} = \textcircled{B} \leftrightarrow \boxed{C}$$
$$\downarrow$$
$$D$$

Here, A is brother of B, B is wife of C and C is father of D.

Hence, A is the brother of D's mother.

∴ A is the maternal uncle of D.

4. **(4)** Given : 36 ÷ 12 × 6 + 9 – 6 = 38

Let us consider option (1) : – and ×

After putting it in given equation we get 36 ÷ 12 – 6 + 9 × 6 = 51

51 ≠ 38. So it is wrong option.

Option (2) : ÷ and ×

After putting in given equation we get 36 × 12 ÷ 6 + 9 – 6 = 75

75 ≠ 38. So it is wrong option.

Option (3) : – and +

After putting it in given equation we get 36 ÷ 12 × 6 – 9 + 6 = 15

15 ≠ 38. So it is wrong option.

Option (4) : ÷ and +

After putting it in given equation we get 36 + 12 × 6 ÷ 9 – 6 = 38

38 is required answer. So, it is correct option.

5. **(1)** Given : = → > , – → +, + → – and a = b = c

Taking option (a) : b = a + c

By Changing the signs we get,

b > a – c

b > a – a   (∵ a = c)

b > 0

∴ This is the correct option.

6. **(1)**

$$\begin{array}{c} +2 \quad +2 \quad\quad -2 \quad -2 \quad\quad +3 \quad +3 \\ F \; N \; H \; L \; J \quad\quad W \; O \; U \; Q \; S \quad\quad B \; N \; E \; K \; H \\ -2 \quad\quad\quad +2 \quad\quad\quad -3 \end{array}$$

$$\begin{array}{c} -3 \quad -3 \quad\quad +4 \quad +4 \\ N \; B \; K \; E \; H \quad\quad D \; T \; H \; P \; L \\ +3 \quad\quad\quad -4 \end{array}$$
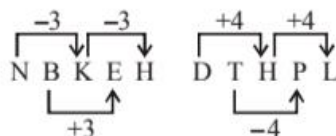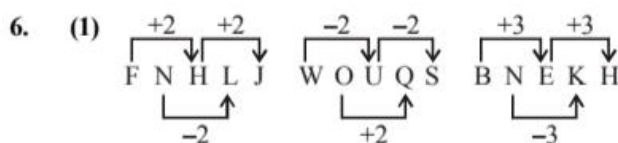
7. **(1)** $(10+6)\times(x-8)=80$

So, $x-8 = \dfrac{80}{16} = 5$

∴ $x = 13$

8. **(3)** $\dfrac{(9\times6\times x)}{10} = 81$

Therefore, $9\times6\times x = 810$

Hence, $x = \dfrac{810}{54} = 15$

9. **(1)** 6 is common in both the cubes.

$$\begin{array}{c} 6 - \textcircled{3} - 2 \\ 6 - \textcircled{1} - 5 \end{array}$$ (written in clock wise direction)

Therefore, 1 will be opposite to 3.

10. **(4)** Either statement 2 or 3 is required to give the answer.

11. **(3)**

12. **(1)**
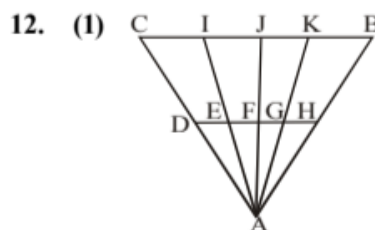
There are 20 triangles in the above figure. ADE, AEF, AFG, AGH, ACI, AIJ, AKB, AJK, ADF, AEG, AFH, ACJ, AIK, AJB, ADG, AEH, ACK, AIB, ADH, ACB are the triangles.

13. **(2)**
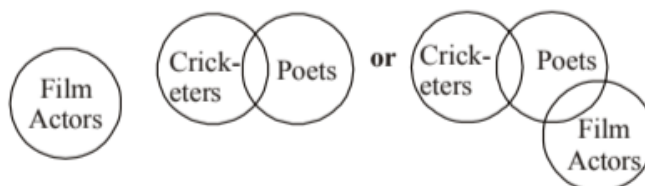
Option (2) is the valid conclusion.

14. (4)

$$2 \quad 6 \quad 30 \quad 260 \quad \boxed{3130}$$
$$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$$
$$1^1+1 \quad 2^2+2 \quad 3^3+3 \quad 4^4+4 \quad 5^5+5$$

15. (3)

$$\qquad\qquad\qquad\quad 80$$
$$2 \quad 6 \quad 18 \quad \boxed{82} \quad 650$$
$$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$$
$$1^0+1^2 \quad 2^1+2^2 \quad 3^2+3^2 \quad 4^3+4^2 \quad 5^4+5^2$$

So, $4^3 + 4^2 = 80$

Hence, (3) is answer

16. (2) Extreme comes at middle while middle comes at the extreme. Hence, UMU is the correct answer.

17. (2)

$$\text{F} \quad \text{A} \quad \text{S} \quad \text{T}$$
$$6 \quad 1 \quad 19 \quad 20$$

Therefore, $6^2 + 1^2 + 19^2 + 20^2 = 798$

Also,

$$\text{L} \quad \text{A} \quad \text{S} \quad \text{T}$$
$$12 \quad 1 \quad 19 \quad 20$$

Threrefore, $12^2 + 1^2 + 19^2 + 20^2 = 906$

So,

$$\text{B} \quad \text{U} \quad \text{S} \quad \text{Y}$$
$$2 \quad 21 \quad 19 \quad 25$$

Therefore, $2^2 + 21^2 + 19^2 + 25^2 = 1431$

18. (2)

A	Town	Casual	Girl
B	Town	Casual	Boy
C	Village	Casual	Girl
D	Village	Studious	Girl
E	Village	Casual	Boy
F	Village	Studious	Boy

From above data, it is clear that D is the studious girl from village.

19. (2) Kunal < Gopal < Ashok

Navin < Kunal

Navin < Jayesh < Ashok

From above, we have concluded that Ashok is the tallest among others.

20. (3) Given below is the arrangement of 5 persons

$$\text{L} \begin{array}{ccccc} | & | & | & | & | \end{array} \text{R}$$
$$\quad \text{Prof.} \quad \text{Std.} \quad \text{Adv.} \quad \text{Auth.} \quad \text{Buss.}$$

Hence, from left, Advocate is standing at 3rd place.

For 21 – 24

I	II
CLEAR	$\gamma\,\beta\,\omega\,\pi\,\theta$
VIEW	$\upsilon\,\varepsilon\,\gamma\,\delta$
TURN	$\eta\,\rho\,\pi\,\sigma$
BUTTER	$\sigma\,\rho\,\alpha\,\sigma\,\pi\,\gamma$
OILY	$\delta\,\lambda\,\theta\,\mu$
WRITE	$\gamma\,\pi\,\sigma\,\upsilon\,\delta$
VOWEL	$\upsilon\,\lambda\,\varepsilon\,\gamma\,\theta$

After decoding, we get

T → σ	R → π
E → γ	N → η
U → ρ	O → λ
L → θ	Y → μ
W → υ	B → α
I → δ	C → β or ω
V → ε	A → β or ω

21. (2) LIVER → $\theta\,\delta\,\varepsilon\,\gamma\,\pi$

Hence, option (2) is the correct answer.

22. (4) TROUBLE → $\sigma\,\pi\,\lambda\,\rho\,\alpha\,\theta\,\gamma$

Hence, option (4) is correct answer.

23. (3) BROWN → $\alpha\,\pi\,\lambda\,\upsilon\,\eta$

24. (1) CYCLE → $\beta\,\mu\,\beta\,\theta\,\gamma$

For 25-28

From the given data, it has concluded that

$$\boxed{Q} < \bigcirc\text{T} < \boxed{P} < R < S < V < \boxed{W}$$

Architect Lawyer Phar-macist Teacher Engg. Dr. CA
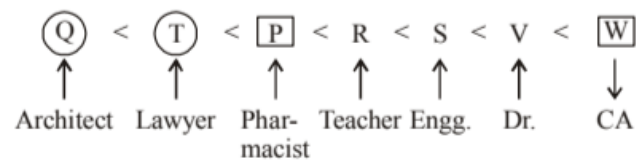
Q & T are females while W is male.

25. (2) Husband is CA and wife is an architect.

26. (1) Architect earns less than lawyer.

27. (1) P is pharmacist

28. (4) Data Inadequate

29. (3)

30. (4)

31. (3)

$$7 \quad 23 \quad 55 \quad 109 \quad \boxed{191}$$
$$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$$
$$2^3-1 \quad 3^3-4 \quad 4^3-9 \quad 5^3-16 \quad 6^3-25$$

32. (2)

$$1^2 \to 1 \;\rightarrow\; \oplus \to 26$$
$$5^2 \to 25 \;\rightarrow$$
$$\qquad\qquad\qquad\qquad \ominus \to 3$$
$$2^2 \to 4$$
$$3^2 \to 9 \;\rightarrow\; \oplus \to 29$$
$$4^2 \to 16$$

$$10^2 \to 100 \;\rightarrow\; \oplus \to 136$$
$$6^2 \to 36$$
$$\qquad\qquad\qquad\qquad \ominus \to 58$$
$$9^2 \to 81$$
$$8^2 \to 64 \;\rightarrow\; \oplus \to 194$$
$$7^2 \to 49$$

∴ Option 2nd is the correct answer

33. (1) 13 represents non educated non working urban females.

34. (2) 40

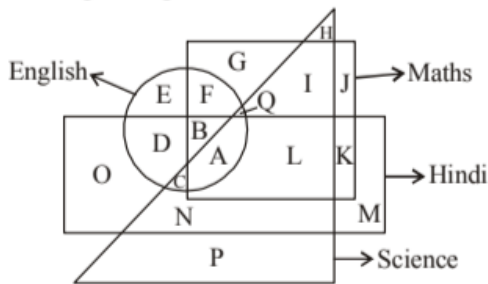**35. (4)** 3 represents non-working rural male whose not educated.

36. (2) $(70 + 9) = 79$ So, option (2) is the correct answer.

37. (1)

38. (3) Crime : Police : : Flood : Rain
∵ Police is present when there is a crime.
Flood is occur because of rain.
∴ Option (3) is the correct answer.

39. (4) All the given figures are correct.

40. (4)

∵ 'I' statement is wrong, because according to statement answer is A (passed in all subject).
'II' statement is wrong, because there are more than 2 letters who passes on three subject.
So, option (4) is correct answer.

41. (3) $[(7)^2 + (2)^2] - [(3)^2 + (5)^2] = 49 + 4 - 9 - 25 = 19$
$[(8)^2 + (5)^2] - [(7)^2 + (4)^2] = 64 + 25 - 49 - 16 = 24$
∴ $[(6)^2 + (4)^2] - [(3)^2 + (5)^2] = 36 + 16 - 9 - 25 = 18$

42. (4) Let cost of pen = x, Pencil = y and Notebook = z
According to question
statement I $5x + 6y + 7z = 178$ ...(1)
Statement 2 $6x + 4y + 2z = 124$ ...(2)
After solving, we get

$$
\begin{array}{r}
42x + 28y + 14z = 868 \\
- \quad 10x + 12y + 14z = 356 \\
\hline
32x + 16y \qquad\quad = 512
\end{array}
$$

∵ We required one more equation with same variable to solve the question further.
So, option (4) is the correct answer.

43. (3) (1)

(2)

(3)

(4)

44. (4) Letters are obtained by reversing the rank.

∵ R V X Y S   ∵ T Z W U V
  ↓ ↓ ↓ ↓ ↓   ↓ ↓ ↓ ↓ ↓
  9 5 3 2 8   7 1 4 6 5

So, option (4) is the correct answer.

45. (1) On April 4, 1984 X was 120 days old and Y was 60 days old.

46. (3) Both the words are based on the fact. Like Famine means extreme hunger while war means destruction.

47. (4) From statement I :

From statement II:

Combining statement I & II. We get,

Hence, both the statements are required.

48. (4) – ab – a – ba – ab – – ab –
There are 16 positions vacant in the seqence. Dividing 16 into its factors, that is 4 × 4. Then divide the row in 4 × 4 and we observed the following pattern as

a ab a | a a ba | a ab a | a ab a

∴ option (d) is the correct answer.

49. (2) Position of BLUE → 1ˢᵗ
Position of UBLE → 20ᵗʰ
UBLE's position is 20 according to dictionary.
∴ Option (2) is correct answer.

50. (4) Every square has at least one symbol in it but 4ᵗʰ square contains only mathematial signs.
So, option (4) is correct answer.