IMPORTANT INSTRUCTIONS

- The maximum marks are 300. Time allotted is **90 MINUTES.**
- There are five sections in the question paper having total **75 questions:**
  - Section – A : Maths (20 Questions)
  - Section – B : Science (20 Questions)
  - Section – C : English (15 Questions)
  - Section – D : Aptitude (10 Questions)
  - Section – E : General Knowledge (10 Questions)
- Each question carries **4 marks.**
- **Negative Marking : ¼ (One-fourth) mark** will be deducted for every incorrect answer.
- **Use only BLUE / BLACK ball pen to fill the circles in bubble sheet.**
- Use of PENCIL is strictly **not allowed.**
- **Do not use marker or white fluid** to hide the mark.

SECTION – A
MATHS

Choose the correct option.

1) **Match the column:**

	Column I		**Column II**
A.	$\left\{m\sqrt{n\sqrt{\frac{1}{a}}}\right\}^{mn}$ is	(i)	$\frac{3}{10}\times\frac{3}{10}\times\frac{3}{10}$
B.	If $\frac{2^{m+n}}{2^{n-m}}$ = 16, then m is	(ii)	$\frac{xy}{x+y}$
C.	$\left(\frac{100}{9}\right)^{-3/2}$ is	(iii)	$\frac{1}{a}$
D.	$(x^{-1}+y^{-1})^{-1}$ is	(iv)	2

Codes :

	A	**B**	**C**	**D**		**A**	**B**	**C**	**D**
a)	(i)	(ii)	(iii)	(iv)	b)	(iii)	(iv)	(i)	(ii)
c)	(iv)	(iii)	(i)	(ii)	d)	(iii)	(ii)	(iv)	(i)

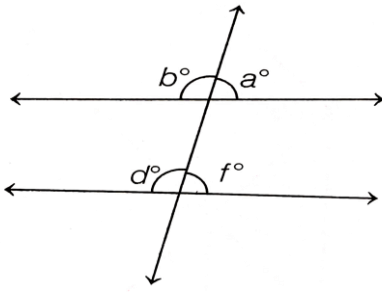
2) State 'T' for true or 'F' for false.

I. Angles forming a linear pair are complementary.

II. If two lines are perpendicular to the third line, then those two lines are perpendicular to each other.

III. In the given figure, if $\angle a = 50^{\circ}$, then $\angle f$ is equal to 130°.

IV. A rotating ray after making a complete rotation coincides with its initial position. The angle formed is reflex angle.

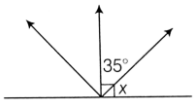


(fig. 1)

Codes :

	I	II	III	IV		I	II	III	IV
a)	F	F	F	F	b)	T	T	T	T
c)	F	F	T	F	d)	T	T	F	F

3) **Match the following:**

	Column I		Column II
A.	In an equilateral triangle	(i)	55°
B.	If,  Then, $\angle x$ is equal to	(ii)	45°
C.	A right angled isosceles triangle has other angles equal to	(iii)	All angles are equal
D.	Sum of interior angles of a pentagon is	(iv)	540°

Codes :

	A	B	C	D		A	B	C	D
a)	(i)	(ii)	(iii)	(iv)	b)	(ii)	(iv)	(i)	(iii)
c)	(iii)	(i)	(ii)	(iv)	d)	(iv)	(iii)	(i)	(ii)

4) State 'T' for true or 'F' for false.

I. Every square is a rectangle.

II. If all angles of a quadrilateral are equal, then it is a parallelogram.

III. The sum of all interior angles of a quadrilateral is 180°.

IV. A rhombus is a quadrilateral, whose all sides are equal and each angle is 90°.

Codes :

	I	II	III	IV		I	II	III	IV
a)	T	T	T	T	b)	T	F	T	F
c)	T	F	F	F	d)	F	F	T	F

5) The taxi fare in a city is as follows:
For the first km, the fare is ₹ 8 and for the subsequent distance, it is ₹ 5 per km. Taking the distance covered as x km and total fare as ₹ y. The linear equation for this information is

a) $5x + y + 3 = 0$ b) $5x - y + 3 = 0$

c) $5x + y - 3 = 0$ d) $5x - y - 3 = 0$

6) Choose the correct statement.

a) The angle between the bisectors of a linear pair of angles is a right angles.

b) The angles between the bisectors of a linear pair of angles is a complementary angle to itself.

c) If two lines intersect, then the vertically opposite angles are supplementary

d) All of the above

7) $(x + y)(x - y)(x^2 + xy + y^2)(x^2 - xy + y^2)$ is equal to

a) $x^6 + y^6$ b) $x^6 - y^6$ c) $x^3 + y^3$ d) $(x + y)^6$

8) State 'T' for true or 'F' for false.

I. After four vertical lines for a tally mark, if the tally mark occurs for the fifth time, then the fifth line is put vertically with previous four lines.

II. The range is the difference between the greatest and the least values of the variate.

III. Class mark = $\frac{\text{Upper limit + Lower limit}}{2}$

Codes :

	I	**II**	**III**		**I**	**II**	**III**
a)	F	T	T	b)	T	F	F
c)	F	F	F	d)	T	T	T

9) State 'T' for true or 'F' for false.

I. Diameter is the shortest chord of the circle.

II. Two chords of a circle which are equidistant from the centre of the circle, are equal.

III. Two congruent circles have equal perimeter and different area.

IV. Two circles can intersect at more than two points.

Codes :

	I	**II**	**III**	**IV**		**I**	**II**	**III**	**IV**
a)	F	T	F	F	b)	T	F	T	T
c)	F	F	T	F	d)	T	T	F	T

10) Calculate the total surface area of the solid shapes using the data in column I and match them with column II

	Column I		**Column II**
A.	A hemisphere of radius 10.5 cm	(p)	6600 cm^2
B.	A cone of base radius 30 cm and slant height 40 cm	(q)	1039.5 cm^2
C.	A Cuboidal room of dimension $5 \times 6 \times 7$ (in cm)	(r)	1716 cm^2
D.	A cylinder of base radius 13 cm and height is 8 cm	(s)	214 cm^2

Codes :

	A	**B**	**C**	**D**		**A**	**B**	**C**	**D**
a)	q	p	s	r	b)	r	s	p	q
c)	q	s	p	r	d)	s	p	r	q

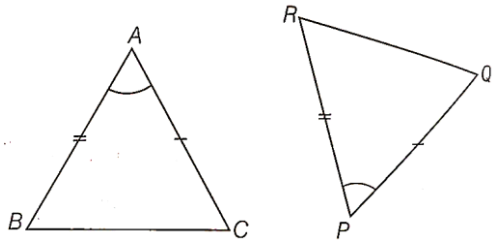
11) Which of the following criteria of congruency is shown in (fig. 2)?

a) ASA

b) SSS

c) SAS

d) None of the above



(fig. 2)

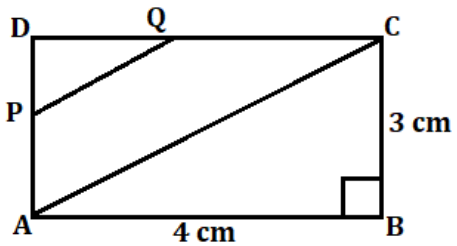
12) In the following (fig. 3), if ABCD is a rectangle and P, Q are the mid-points of AD, DC respectively. Then, the ratio of lengths PQ and AC is equal to

a) 1 : 1

b) 1 : 2

c) 2 : 1

d) 3 : 2



(fig. 3)

13) **Match the column:**

	Column I		**Column II**
A.	98×102 is equal to	(i)	$a^3 + b^3 + c^3 - 3abc$
B.	$\frac{1}{2}(a+b+c)\{(a-b)^2 + (b-c)^2 + (c-a)^2\}$ is	(ii)	18
C.	If $a^{1/3} + b^{1/3} + c^{1/3} = 0$, then	(iii)	9996
D.	$(-1)^3 - (2)^3 + (3)^3 = 0$, then	(iv)	$(a+b+c)^3 = 27\,abc$

Codes :

	A	**B**	**C**	**D**		**A**	**B**	**C**	**D**
a)	(i)	(ii)	(iii)	(iv)	b)	(iii)	(i)	(iv)	(ii)
c)	(ii)	(iv)	(i)	(iii)	d)	(iv)	(ii)	(i)	(iii)

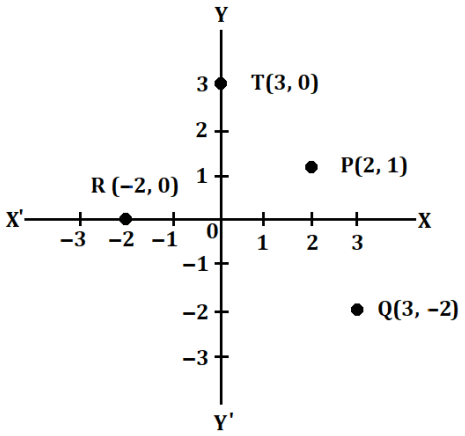
14) **Match the column:**

	Column I		**Column II**
A.	The degree of a linear equation is	(i)	$x + 2y = 500$
B.	A player A scored *x* runs and other player B scored 2 *y* runs. If both together scored 500 runs, then the equation of this information is	(ii)	1
C.	A linear equation of $ax + by + c = 0$ has	(iii)	$x - 2y = 0$
D.	The cost of a book *x* is twice the cost of a pen *y*, is represented by	(iv)	infinite solutions

Codes :

	A	**B**	**C**	**D**		**A**	**B**	**C**	**D**
a)	(i)	(ii)	(iii)	(iv)	b)	(ii)	(i)	(iv)	(iii)
c)	(iii)	(iv)	(i)	(ii)	d)	(iv)	(i)	(ii)	(iii)

15) **Match the column:**



(fig. 4)

	Column I		**Column II**
A.	Coordinate of point lies in the IV quadrant	(i)	(3, 0)
B.	Distance of a point R from origin.	(ii)	2
C.	It we draw a perpendicular line from Q to the axes, then the area of a rectangle is equal to	(iii)	-2
D.	Coordinate of a point of Y-axis	(iv)	$(3, -2)$
		(v)	6

Codes :

	A	**B**	**C**	**D**		**A**	**B**	**C**	**D**
a)	(iv)	(ii)	(i)	(v)	b)	(ii)	(iv)	(i)	(v)
c)	(iv)	(ii)	(v)	(i)	d)	(iv)	(ii)	(i)	(v)

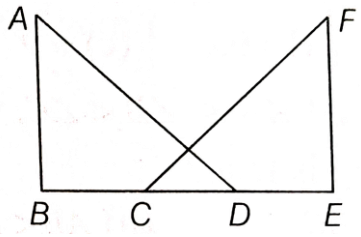
16) In the given (fig. 5), AB ⊥ BE and FE ⊥ BE. If AB = FE and BC = DE, then

a) $\Delta ABD \cong \Delta FCE$

b) $\Delta ABD \cong \Delta FEC$

c) $\Delta ABD \cong \Delta EFC$

d) $\Delta ABD \cong \Delta CEF$



(fig. 5)

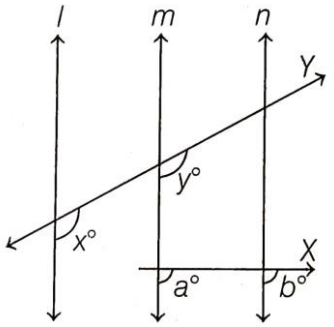
17) In (fig. 6), $\angle x = \angle y$ and $\angle a = \angle b$. Then

a) $l \parallel y$

b) l is transversal of m and n.

c) $l \parallel n$

d) $x \parallel y$



(fig. 6)

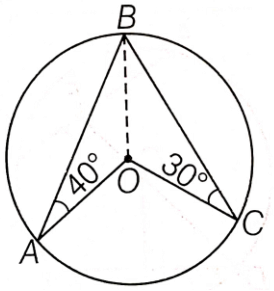
18) In the following (fig. 7), AB and BC are two chords of the circle with centre O, where $\angle BAO = 40°$; $\angle BCO = 30°$, then $\angle AOC$ is equal to

a) 120°

b) 70°

c) 140°

d) None of the above



(fig. 7)

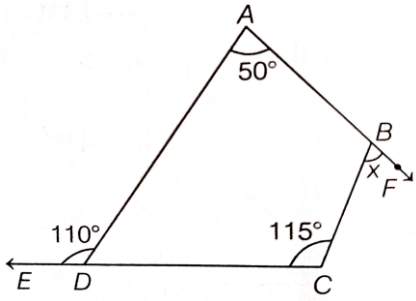
19) In the given (fig. 8), sides AB and CD of the quadrilateral ABCD are produced. Find the value of $\angle x$.

a) 75°

b) 80°

c) 55°

d) 65°



(fig. 8)

20) Study the given statements carefully.

Statement I : $\frac{(a^2-b^2)^3+(b^2-c^2)^3+(c^2-a^2)^3}{(a+b)^3+(b+c)^3+(c+a)^3} = (a+b)(b+c)(c+a)$

Statement II : $a^2+b^2+c^2-ab-bc-ca = \frac{1}{2}[(a-b)^2+(b-c)^2+(c-a)^2]$

Which of the following options is correct?

a) Both Statement – I and statement – II are true.

b) Statement – I is true but statement – II is false.

c) Statement – I is false but statement – II is true.

d) Both Statement – I and statement – II are false.

SECTION – B
SCIENCE

21) A gas can be compressed to a fraction of its volume. The same volume of a gas can be spread all over a room. The reason is that

a) The volume occupied by molecules of a gas is negligible as compared to the total volume of the gas.

b) Gases consist of molecules which are in a state of random motion.

c) Gases consist of molecules having very large intermolecular spaces which can be reduced or increased under ordinary conditions

d) One mole of each gas occupies 22.4 L at STP

22) Consider the following cases.

I. Granite

II. Sodium chloride

III. Muddy water

Which of the above substances can be considered as pure substances?

a) I and II b) I and III c) Only II d) II and III

23) 2.5 g of a solute is dissolved in 25 g of water to form a saturated solution at 298 K. The solubility of the solute in 100g of water at 298K is

a) 1 g b) 10 c) 100 d) 1000

24) State 'T' for true or 'F' for false and choose the correct option.

I. Making of wine from grapes is a chemical change.

II. A chemical change has no effect on physical properties but changes only the chemical composition.

III. A physical change has no effect on chemical composition but affect only physical properties.

IV. Drying of paint on a door is a physical change.

V. Electrolysis of water by passing electric current through it, is a chemical change.

VI. Evaporation is a chemical change while decantation is a physical process.

	I	**II**	**III**	**IV**	**V**	**VI**
a)	T	T	T	F	F	F
b)	F	T	T	T	F	T
c)	T	F	F	F	T	T
d)	T	F	T	F	T	F

25) Which of the cell organelle takes part in the formation of acrosome?

a) Nucleus b) Chromosome c) Golgi complex d) Mitochondria

26) Which one of the given options is/are not true?

I. Mitochondria is involved with formation of lysosomes.

II. Nucleus, mitochondria and plastid have DNA. Hence, they are able to make their own protein.

III. Mitochondria is said to be powerhouse of the cell as ATP is generated in them.

IV. Cytoplasm is called as protoplast.

a) I and IV b) III and IV c) I and II d) II and IV

27) **Match Column I with II and select the correct option given below.**

	Column I		**Column II**
A.	Cell Wall	(1)	Head quarter of the cell
B.	Nucleus	(2)	Security guard of the cell
C.	Smooth Endoplasmic reticulum	(3)	Kitchen of the cell
D.	Chloroplast	(4)	Suicidal bags of the cell
E.	Golgi body	(5)	Channel for transportation and detoxification
F.	Lysosome	(6)	Packaging of product and formation of lysosome

Codes :

	A	**B**	**C**	**D**	**E**	**F**
a)	2	1	6	5	4	3
b)	2	1	5	3	6	4
c)	6	5	4	3	1	2
d)	1	2	4	3	6	5

28) If the tip of sugarcane plant is removed from the field, even then it keeps on growing in length. Which part of the plant is responsible for this? Select the correct option.

a) Cambium b) Apical meristem
c) Lateral meristem d) Intercalary meristem

29) A person met with an accident in which two long bones of his hand were dislocated. Which among the following may be the possible reasons?

a) Tendon break b) Ligament break
c) Break of skeletal muscle d) Areolar tissue break

30) Aman is drawing a bucket of water out of well. Suddenly, bucket falls back when the rope snaps. This is because of

a) Law of gravitation b) First law of motion
c) Newton's second law of motion d) Newton's third law of motion

31) A body is moving in a circle at a constant speed. Which of the following statements about the body is true?

a) There is no acceleration
b) There is a force acting at a tangent to the circle
c) There is a force acting away from the centre of the circle
d) There is a force acting towards the centre of the circle

32) Consider the following statements about Tyndall effect.

I. It is scattering and polarizing of light by small suspended particles.
II. It is due to dispersion of light.
III. It is due to refraction of light.
IV. It is the zig-zig motion of suspended particles

The true statement (s) is/are

a) Only I b) I, II and IV c) Only III d) Only II

33) In which of the following endoplasmic reticulum is absent?

a) Cell of pancreas and salivary gland
b) Mature Erythrocytes of mammals and prokaryotes
c) Cell of brain
d) Nephrons

34) Forces are invisible but they can be

A. felt B. heard C. seen in action D. measured

Choose the correct option.

a) A and B b) A and D c) A, C and D d) A, B, C and D

35) Raindrops when fall from cloud are attracted towards the earth due to gravitational force of attraction. The drops are first uniformly accelerated whereas after sometime the drops attain constant velocity and acceleration becomes zero. Why?

a) Air resistance increases with increase of velocity

b) The earth's gravitational field decreases as the object falls

c) The mass of the object remains constant

d) The weigh of the object increase as it falls.

36) A passenger sitting in a moving railway carriage throws a ball vertically upwards. The ball would fall in front of him if the train is moving with

a) An acceleration b) A retardation

c) A uniform velocity d) All of the above

37) In (fig. 9) a person just supports a mass of 20 kg suspended from a rope.

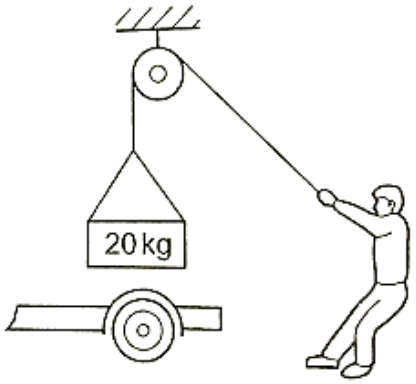
What is the resultant force acting on the mass (g = 10 ms^{-2})?

a) zero

b) 10 N

c) 20 N

d) 200 N

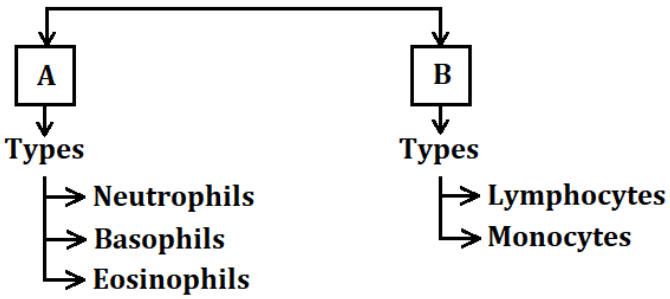


(fig. 9)

38) Complete the following flow chart.

Identify A and B from the options given (fig. 10)

	A	B
a)	Erythrocytes	Leucocytes
b)	Granulocytes	Agranulocytes
c)	Granulocytes	Agranulocytes
d)	Agranulophils	Granulocytes



(fig. 10)

39) The electrons configuration of an element M is 2, 8, 3. On this basis, the nature of oxide of element M is

a) Acidic b) Basic c) Amphoteric d) Data insufficient

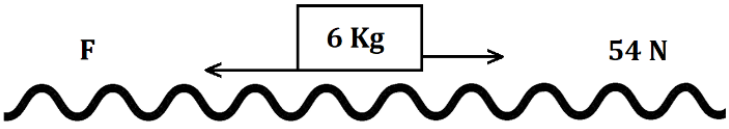
40) In (fig. 11) a block of mass 6 kg is pulled across a rough surface by a 54 N force against a friction force F. The acceleration of the block is 6 m/s^2. What is the value of F?

a) 9 N

b) 18 N

c) 36 N

d) 54 N



(fig. 11)

Read the text and answer the questions that follow.

The Whispering Winds

Beneath the sky where shadows play,
The whispering winds have much to say.
They sing of tales from lands afar,
Of battles fought beneath the star.
Yet in their cry, a truth does hide,
A riddle veiled where secrets bide.

41) What do the whispering winds symbolize in the poem?
   a) Nature's beauty
   b) Stories from distant lands
   c) A calming presence
   d) A mysterious truth hidden within

42) What literary device is used in "The whispering winds have much to say"?
   a) Hyperbole b) Personification c) Metaphor d) Simile

43) What is the tone of the poem?
   a) Jubilant b) Mysterious c) Nostalgic d) Melancholic

44) What does the phrase "a riddle veiled where secrets bide" suggest?
   a) The winds carry hidden truths
   b) The winds speak in riddles to entertain
   c) The winds conceal their power
   d) The winds are a metaphor for human imagination

45) Which theme is central to the poem?
   a) The inevitability of fate
   b) The enduring power of nature's stories
   c) The beauty of celestial phenomena
   d) The transient nature of human life

WORD AND STRUCTURE KNOWLEDGE

46) Five parts of sentences are given. You are provided with the beginning S1 and the ending with the S5 of the sentence. Directions: The first and last parts of the sentence are fixed. Rearrange the jumbled parts to form a coherent and meaningful sequence.
   S1: The French Revolution marked a turning point in world history.
   S2: It brought an end to absolute monarchy in France.
   S3: The revolution was driven by ideals of liberty, equality, and fraternity.
   S4: These principles inspired political movements across the globe.
   S5: Its impact is still felt in modern democracies.
   What is the correct order of jumbled part?
   a) S3, S2, S4 b) S2, S3, S4 c) S4, S3, S2 d) S2, S4, S3

47) In the given question, a part of the sentence is given in quotes. Choose the correct alternative from the options.
   The author believes that "perseverance and determination" are important because:
   a) they help overcome obstacles and achieve goals.
   b) they create unnecessary pressure in daily life.
   c) they eliminate the need for hard work.
   d) they allow one to depend on others for success.

48) Choose the word or phrase that can substitute the highlighted word.
His explanation of the process was "**concise**" and easy to understand.
a) lengthy b) brief c) complex d) vague

49) Change the following sentence into indirect speech by choosing the correct option.
"If you don't keep quiet I will punish you."
a) She warned her to punish if she didn't keep quiet.
b) She told her that she would punish her if she didn't keep quiet.
c) She warned that she would be punished if she don't keep quiet.
d) She warned that she would punish you if she didn't keep quiet.

50) Which of the phrases A, B, and C given below the sentence should replace the underlined phrase to make the sentence grammatically correct? If the sentence is correct, mark D as the answer.
The company is planning to open <u>many new branches in different states</u>.
a) much new branches in different states b) many new branch in different states
c) much new branch in different states d) No correction required

51) Four words are given in each question, out of which only one word is correctly spelt. Find the correctly spelt word.
a) Exhilarate b) Exhilirate c) Exhilirrate d) Exhilerate

52) Given below are four alternatives for the given idiom. Choose the most appropriate option.
'A leopard can't change its spots.'
a) A person will never change their inherent nature
b) A person can adapt to new surroundings
c) A person can improve their skills with practice
d) A person can change their appearance

53) In the following question, the sentence has been given in active voice. From the given alternative, choose the one which best expresses the given sentence in passive voice.
'The company will launch the new product tomorrow.'
a) The new product is launched by the company tomorrow.
b) The new product will be launched by the company tomorrow.
c) The new product was launched by the company tomorrow.
d) The new product will be launching by the company tomorrow.

54) Choose the most suitable option to transform the form of the given sentence, keeping the meaning intact.
The chef had prepared the meal before the guests arrived.
a) The meal had been prepared by the chef before the guests arrived.
b) The meal was prepared by the chef before the guests arrived.
c) The meal had prepared by the chef before the guests arrived.
d) The meal is prepared by the chef before the guests arrived.

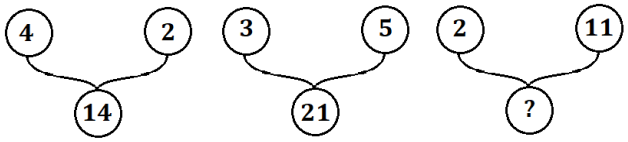
55) Select the best option that best explains the meaning of the idiom marked in the braces.
He finally (spilled the beans) about the surprise party we were planning for her.
a) Kept the secret b) Revealed the secret
c) Ruined the plan d) Forgot about the event

56) In a certain code, 'ze lo ka gi' is a code for 'must save some money', 'fe ka so ni' is a code for 'he made good money', 'ni lo da so' is a code for 'he must be good' and 'we so ze da' is a code for 'be good save grace'. Which of the following is the code for 'good'?

a) so b) we c) ze d) lo

57) Select a number which will replace the question mark in the number pattern given below.

a) 16
b) 15
c) 28
d) 21



58) Ashok starts from point P and walks 5 kms to the East. Bharat starts from the same point and walks 5 kms to the West. Now, Ashok takes a left turn and Bharat takes a right turn, and both walks 5 kms and stop. How far are the two from each other at the point where they finally stop?

a) 10 kms b) 15 kms c) 5 kms d) Can't be determined

Directions [Q. 59) to 60)] Study the information given below and answer the questions that follow.

Eight bureaucrats are having a round table conference with each one seated facing the centre, A is sitting two positions to the right of E. B is sitting between D and F, G, due to his personal enemity with A, doesn't sit next to him but instead sits diametrically opposite to D. The position of H is equidistant from either side of A.

59) A's immediate neighbours are

a) C, F b) C, D c) B, C d) F, H

60) How many persons are sitting between E and G?

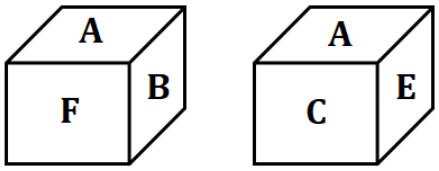
a) 1 b) 3 c) 2 d) None of these

61) A boy goes to the market and finds a man who is his relative. The man is the husband of the sister of his father. How is man related to the boy?

a) Nephew b) Uncle c) Father d) Father-in-law

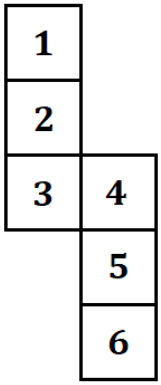
62) Two positions of a cube, which have letters A to F on its face, are shown below. Find the letter which will be on the face opposite to face with A?

a) F
b) C
c) B
d) D



63) Which number will be opposite to the face having number 3 when the given (fig. 12) is folded to form a cube?

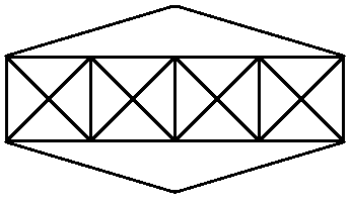
a) 5
b) 2
c) 4
d) 6



(fig. 12)

64) Count the number of squares in the given (fig. 13).

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



(fig. 13)

65) (i) 'A $ B' means 'A is mother of B'.
(ii) 'A ≠ B' means 'A is the father of B'.
(iii) 'A @ B' means' A is the husband of B'.
(iv) 'A % B' means 'A is the daughter of B'.
Which of the following expression represents the relationship 'H is the brother of N'?

a) N % F @ D $ H
b) N % F @ D % H
c) N % F @ D $ H ≠ R
d) H ≠ R $ D $ N

66) Recently, where was the Financial Action Task Force (FATF) meeting held?

a) China b) France c) Indonesia d) Singapore

67) Which country hosts 46th session of the UNESCO World Heritage Committee?

a) Australia b) France c) India d) Russia

68) Recently, where was the 'Global Conclave on Plastic Recycling and Sustainability (GCPRS)' inaugurated?

a) Hyderabad b) Bengaluru c) New Delhi d) Chennai

69) Sentinel Nuclear Missile, recently seen in news, was developed by which country?

a) USA b) Russia c) India d) France

70) Which state assembly recently introduced a new legislative practice by launching "Zero Hour"?

a) Manipur b) Himachal Pradesh c) Odisha d) West Bengal

71) What is the total financial outlay recently approved by the Union Cabinet for "Mission Mausam"?

a) Rs 1,000 crore b) Rs 2,000 crore c) Rs 3,000 crore d) Rs 4,000 crore

72) Where is the headquarter of Federal Bank located?

a) Kerala b) Tamil Nadu c) Gujarat d) West Bengal

73) Who among the following is the Supreme Commander of Indian armed forces?

a) President of India
b) Vice President of India
c) Prime Minister of India
d) Defense Minister of India

74) Which sport's competition is known as the "ATP Challenger Tour"?

a) Table Tennis b) Taekwondo c) Tennis d) Triathlon

75) A rabbit is swallowed by a snake, which in turn by a falcon. What is the position of snake in this food chain?

a) Producer
b) Primary Consumer
c) Secondary consumer
d) Tertiary Consumer