



Class – VI

School Integrated Program

ENTRANCE TEST CUM SCHOLARSHIP TEST

[Time: 3 Hours]

[Max Marks: 300]

A. General:

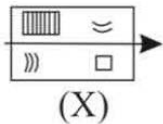
1. *This booklet is a Question Paper containing 100 questions.*
2. *Blank Papers, Clipboards, Log Tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed to be carried inside the examination hall.*
3. *The answer sheet, a machine-readable optical mark recognition sheet (OMR Sheet), is provided separately.*
4. *DO NOT TAMPER WITH THE OMR OR THE BOOKLET.*
5. *Please fill your roll number correctly in the OMR sheet (answer sheet).*
6. *Both Question Paper and OMR Answer Sheet will be submitted after completion of this examination.*

B. Question Paper Format and marking scheme:

1. *The Question Paper consists of five parts (Part I: MAT, Part II: Physics, Part III: Chemistry, Part IV: Biology, Part V: Mathematics).*
2. *Each Question carries +3 marks for correct answer and -1 mark for incorrect answer.*

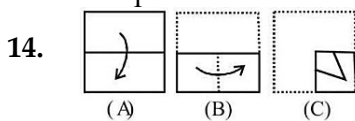
MAT

1. In a code language, if TRAINS is coded as RTIASN, how will FLOWER be coded in the same language ?
 (a) LFLOWER (b) LFWORE (c) WORELF (d) ERFLOW
2. If in a certain code language, TWENTY is coded as 863985 and ELEVEN is coded as 323039, how will TWELVE be coded?
 (a) 863903 (b) 863650 (c) 863203 (d) 683583
3. How many 7s are there in the following number series which are preceded by 9 and also followed by 6 ? 7 8 9 7 6 5 3 4 2 8 9 7 2 4 5 9 2 9 7 6 4 7
 (a) Two (b) Three (c) Four (d) Five
4. Sunita ranked 11th from the top and 27th from the bottom in a class. How many students are in the class?
 (a) 38 (b) 28 (c) 40 (d) 37
5. Sarita is at 27th position from the top in a class of 43 students. What is her rank from the other side?
 (a) 16th (b) 17th (c) 15th (d) 21th
6. Sobha was facing East. She walked 20 metres. Turning left she moved 15 metres and then turning right moved 25 metres. Finally, she turned right and moved 15 metres more. How far is she from her starting point?
 (a) 25 metres (b) 35 metres
 (c) 50 metres (d) 45 metres
7. Deepak said to Nitin, " That boy playing football is the younger of the two brothers of the daughter of my father's wife "How is the boy playing football related to Deepak?
 (a) Son (b) Brother (c) Cousin (d) Niece
8. A and B are brothers. C and D are sisters A's son is D's brother. How is B related to C
 (a) Father (b) brother (c) Grand father (d) Uncle
9. If $S - T$ means ' S ' is the wife of ' T ' $S + T$ means ' S ' is the daughter of ' T ' and $S \div T$ means ' S ' is the son of ' T ' What will $M + J \div K$ means ?
 (a) ' K ' is the father of ' M ' (b) M' is the grand daughter of K
 (c) ' J ' is wife of ' K ' (d) ' K ' and ' M ' are brothers
10. Complete the series 13, 24, 46, 90, 178,
 (a) 354 (b) 266 (c) 364
11. Complete the series 4,9,16,25,
 (a) 32 (b) 42 (c) 55 (d) 36
12. Complete the series 63,58,51,40,27, ?
 (a) 8 (b) 12 (c) 10 (d) 14
13. Find the correct option for the water image for the following question.



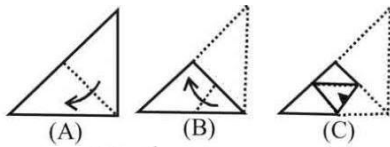
- (a) (b) (c) (d)

Direction (Qs.14-15) : Consider the three figures, marked A, B, and C showing one fold in A, another in B and the cut in C. From amongst the four alternative figures a, b, c and d, select the one showing the unfolded position of C.



- (a) (b) (c) (d)

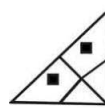
15.



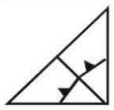
(a)



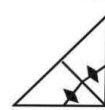
(b)



(c)

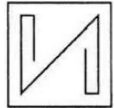


(d)



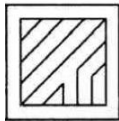
Direction (Qs. 16-17) : In each of the following questions, you are given a figure (X) followed by four alternative figures (a), (b), (c) and (d) such that fig. (X) is embedded in one of them. Trace out the alternative figure which contains fig. (X) as its part.

16.

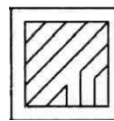


(X)

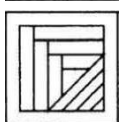
(a)



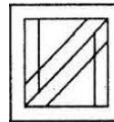
(b)



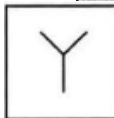
(c)



(d)



17.



(X)

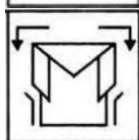
(a)



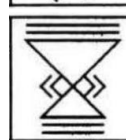
(b)



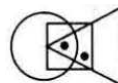
(c)



(d)

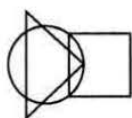


18. In the following question, from amongst the figures marked (a), (b), (c) and (d), select the one which satisfies the same conditions of placement of the dot as in fig. (X).



(X)

(a)



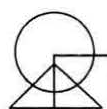
(b)



(c)



(d)



19. In the question below are given two statements followed by 2 conclusions numbered I & II. You have to take the given two statements to be true even if they seem to be at variance from commonly known facts. Read the conclusion and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts.

Statements: Some hens are cows. All cows are horse.

Conclusion:

I. Some horses are hens.

II. Some hens are horses.

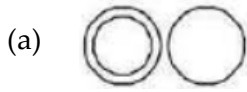
(a) If only conclusion I follows

(b) If only conclusion II follows

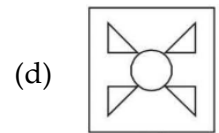
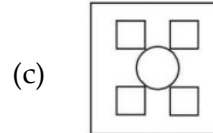
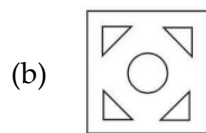
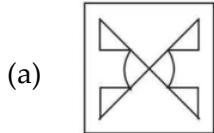
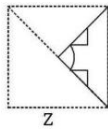
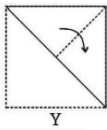
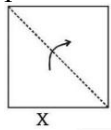
(c) If both conclusion I & II follows.

(d) If neither conclusion I nor II follows

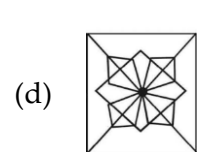
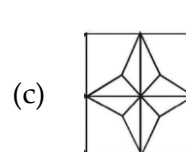
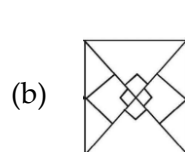
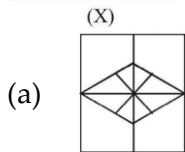
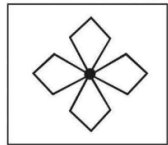
20. Choose the correct alternative that represents the relationship among illiterates, poor people and unemployed.



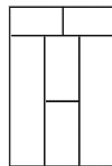
21. Consider the three figures, marked X, Y, and Z showing one fold in X, another in Y and the cut in Z. From amongst the four alternative figures (a), (b), (c) and (d), select the one showing the unfolded position of Z.



22. Find amongst the four alternatives (a), (b), (c) and (d), the figure which most nearly contains the figure (X). (Rotation is allowed)



23. How many quadrilaterals are there in the given figure?



(a) 11

(b) 12

(c) 14

(d) 13

24. Choose the correct arrangement of mathematical signs at the place of * for equating given equation.

$$7 * 2 * 3 * 5 * 6$$

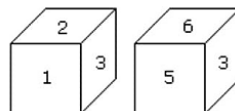
(a) $-, +, =, \times$

(b) $+, \times, =, +$

(c) $=, \times, +, -$

(d) $\times, =, +, +$

25. Which digit will appear on the face opposite to the face with number 4?



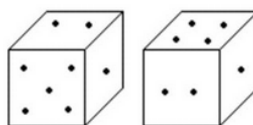
(a) 3

(b) 5

(c) 6

(d) 2/3

26. Two positions of dice are shown below. How many points will appear on the opposite to the face containing 5 points?



(a) 3

(b) 1

(c) 2

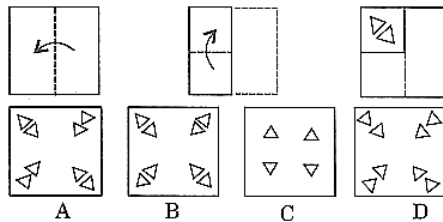
(d) 4

27. If DIAMOND is coded as VQYMKLV, then WEALTH is coded as
 (a) CUYNFR (b) HTLAEW (c) YCONWJ (d) XFBMUI
28. If BEAUTY is coded as YVZFGB, then CHARM is coded as
 (a) XSINZ (b) XSZIN (c) ZINSX (d) BGZQL
29. Identify the figure that completes the pattern.



- (a) (b) (c) (d)

30. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?



- (a) A (b) B (c) C (d) D

PHYSICS

31. Match the following:

Column - I

Column - II

- | | |
|----------------------------|------------|
| A) Like poles of magnets | p) Iron |
| B) Unlike poles of magnets | q) Repel |
| C) Magnetic substance | r) Glass |
| D) Non magnetic substance | s) Nickel |
| | t) Attract |

- (a) $A \rightarrow p; B \rightarrow q; C \rightarrow r; D \rightarrow s$
 (b) $A \rightarrow q; B \rightarrow t; C \rightarrow p; D \rightarrow r$
 (c) $A \rightarrow q; B \rightarrow s; C \rightarrow p; D \rightarrow t$
 (d) $A \rightarrow p; B \rightarrow p; C \rightarrow q; D \rightarrow p$

32. A small compass is placed beside the middle of a bar magnet.



In which direction will the compass needle point?

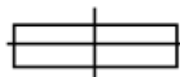
- (A) (B) (C) (D)

- (a) A (b) b (c) C (d) D

33. If a body completes one complete revolution in a circular path, then

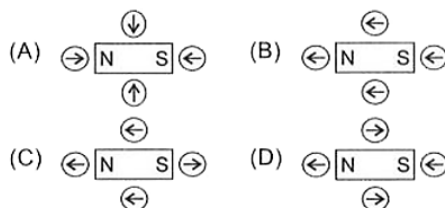
- (a) distance = 0 (b) magnitude of displacement = 0
 (c) Both (a) and (b) are correct (d) None of these

34. A bar magnet has a pole strength 'K'. If it is cut into 4 pieces as shown in the figure. The pole strength of each piece now is _____.

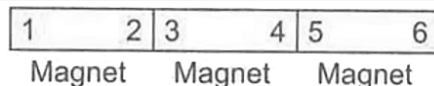


- (a) $K + 4$ (b) $\frac{K}{4}$ (c) $4K$ (d) $\frac{K}{2}$

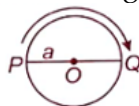
35. The S.I. unit of length is
 (a) Km (b) Meter (c) cm (d) mm
36. Which of the following conversions is/are incorrect?
 (i) 10 decades = 1 century (ii) 100 centuries = 1 millennium
 (iii) 100 inches = 2.54 metres (iv) 100 millimetres = 10 centimetres
 (a) (ii) only (b) (iv) only
 (c) (i) and (ii) only (d) (iii) and (iv) only
37. If the particle covers 20000 meters in 5 hours. What is the speed of the particle.
 (a) 2km/hr (b) 3km/hr
 (c) 4km/hr (d) None of these
38. In the given diagrams, compasses are used to plot the magnetic field around a bar magnet with poles marked N (North) and S (South). Which of the following diagrams correctly shows the expected field pattern?



- (a) A (b) B (c) C (d) D
39. A magnet does not lose its property if it is _____.
 (a) Heated (b) Hammered
 (c) Dropped from a height (d) Wetted with water
40. One centimetre on a scale is divided into 20 equal divisions. The least count (minimum value) of this scale is
 (a) 20cm (b) 1mm (c) 0.1mm (d) 0.5mm
41. Observe the given figure and identify the correct statements.



- (a) Poles 1,3 and 5 are unlike poles. (b) Poles 2, 4 and 6 are like poles.
 (c) Pole 1 will attract pole 3 and 5 (d) Pole 4 will be repelled by pole 1
42. If the particle is moving with a speed of 5m/s. what will be its speed in cm/sec
 (a) 100cm/s (b) 50cm/s
 (c) 500cm/s (d) None of these
43. If the simple pendulum takes 5minutes to complete 3000oscillations. What is the time period of the simple pendulum.
 (a) 0.4s (b) 0.2s
 (c) 0.1s (d) None of these
44. A cyclist moves from a certain point P and goes round a circle of radius 'a' and reaches point Q, exactly at the other side of the point P as shown in figure. The displacement of the cyclist would be



- (a) πa (b) $2\pi a$ (c) $2a$ (d) $2\pi/a$
45. Which material is the suitable material for core of electromagnet
 (a) Steel (b) Copper (c) Soft Iron (d) Ceramic

CHEMISTRY

46. Assertion (A): A metal key can scratch a piece of wood easily.
 Reason (R): Wood is harder than the metal key.
 (a) Both A and R are true, and R is the correct explanation of A.
 (b) Both A and R are true, but R is not the correct explanation of A.

- (c) A is true, but R is false.
 (d) A is false, but R is true.
47. Consider the following statements regarding the solubility of substances in water:
 I. Chalk powder completely disappears in water.
 II. Sawdust floats or settles but remains insoluble.
 III. Oxygen gas is partially soluble and crucial for aquatic life.
 Which of the statements is/are correct?
 (a) I and II only (b) II and III only
 (c) I and III only (d) I, II, and III
48. A student transfers 500 mL of water from a wide jug into a tall, narrow glass bottle. Which property of the water remains completely unchanged?
 (a) Its shape and mass (b) Its volume and mass
 (c) Its shape and volume (d) Its capacity to dissolve sand
49. Match Column I (Material) with Column II (Transparency):
 P. Butter paper Q. Clean water R. Cardboard S. Frosted glass
 (a) P-Translucent, Q-Transparent, R-Opaque, S-Translucent
 (b) P-Opaque, Q-Transparent, R-Translucent, S-Transparent
 (c) P-Translucent, Q-Opaque, R-Transparent, S-Translucent
 (d) P-Transparent, Q-Translucent, R-Opaque, S-Opaque
50. If you are tasked with preparing an Oral Rehydration Solution (ORS) at home because commercial packets are unavailable, what is the medically recommended proportion?
 (a) 2 teaspoons of sugar and 1 teaspoon of salt in 500 mL water
 (b) 6 teaspoons of sugar and half a teaspoon of salt in 1 litre of water
 (c) 10 teaspoons of sugar and 2 teaspoons of salt in 1 litre of water
 (d) 1 teaspoon of sugar and 1 teaspoon of salt in 100 mL water
51. Which of the following properties of materials is considered 'relative' rather than absolute?
 (a) Mass (in kilograms) (b) Volume (in cubic metres)
 (c) Hardness (d) State of matter (solid, liquid, gas)
52. Three identical paper cups are filled as follows: Cup A is half-filled with water, Cup B is half-filled with dry sand, and Cup C is half-filled with pebbles. Which property are we comparing if we weigh them on a balance?
 (a) Their relative volumes (b) Their relative masses
 (c) Their transparency (d) Their solubility
53. In a chemistry lab, you are given a liquid that completely mixes with water forming a single uniform layer. This liquid is said to be:
 (a) Immiscible (b) Soluble/Miscible
 (c) Opaque (d) Non-lustrous
54. In the typical composition of Earth's atmosphere, if represented on a 100-square grid, how many squares would be filled by Nitrogen and Oxygen respectively?
 (a) Nitrogen: 21, Oxygen: 78 (b) Nitrogen: 78, Oxygen: 21
 (c) Nitrogen: 70, Oxygen: 29 (d) Nitrogen: 50, Oxygen: 50
55. The 'Chipko movement' was a landmark environmental movement where local women hugged trees to prevent them from being felled. In which state did this movement originate in the early 1970s?
 (a) Himachal Pradesh (b) Uttarakhand (c) Madhya Pradesh (d) Karnataka
56. Fossil fuels are primarily formed from:
 (a) Igneous rocks subjected to intense heat and pressure.
 (b) The remains of microorganisms and plants buried deep inside the earth over millions of years.
 (c) The continuous decay of modern forest leaves.
 (d) Artificial synthesis in underground laboratories.
57. Earthworms are often found in garden soil. What crucial role do they play in maintaining soil health?
 (a) They consume plant roots, stunting plant growth.

- (b) They help in turning and loosening the soil, providing space for air and roots.
 - (c) They convert atmospheric nitrogen directly into solid rocks.
 - (d) They absorb all the moisture, making the soil dry and stable.
58. What is 'CNG' and why is it preferred over petrol or diesel in modern public transport?
- (a) Combusted Natural Gas; it produces more energy per liter.
 - (b) Compressed Natural Gas; it is a cleaner fuel that causes less air pollution.
 - (c) Coal Natural Gas; it is abundant and completely renewable.
 - (d) Condensed Neon Gas; it engines run completely silently.
59. A basic mobile phone contains about a dozen different minerals (like gold, silver, copper, cobalt). This indicates that:
- (a) Minerals are renewable resources that can be easily manufactured.
 - (b) Rocks and minerals are critical for manufacturing electronic equipment.
 - (c) Mobile phones are naturally occurring resources.
 - (d) Fossil fuels are the primary components of electronics.
60. Assertion (A): We must use freshwater judiciously even though Earth is covered by two-thirds water. Reason (R): Most of the water on Earth is saline and unfit for domestic, agricultural, or industrial use.
- (a) Both A and R are true, and R is the correct explanation of A.
 - (b) Both A and R are true, but R is not the explanation.
 - (c) A is true, but R is false.
 - (d) A is false, but R is true.

BIOLOGY

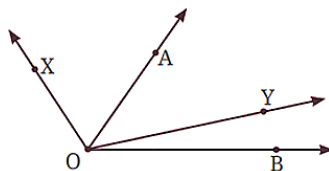
61. Science starts from:
- (a) Books
 - (b) Curiosity and questioning
 - (c) Lab only
 - (d) Memorizing definitions
62. Diversity means:
- (a) Only different animals
 - (b) Huge variety of living beings in size, shape, habitat, food - even in same place
 - (c) Only plants
 - (d) Same type of organisms
63. Which of these is NOT a scientific question?
- (a) Why does the moon change shape daily?
 - (b) How does a seed germinate?
 - (c) Is astrology better than astronomy?
 - (d) What makes a rainbow?
64. Whale, Bat, Human, Cat - kept in same group despite living in water, air, land because:
- (a) All live in same habitat
 - (b) All are mammals
 - (c) All are fish
 - (d) All fly
65. A child says "My plant died because it was cursed." A scientist will:
- (a) Accept it
 - (b) Test soil, water, light with evidence and try to disprove curse idea
 - (c) Say curse is science
 - (d) Ignore
66. Which pair has INCORRECT habitat adaptation?
- (a) Cactus - desert - thick fleshy stem to store water, leaves as spines
 - (b) Lotus - aquatic - hollow stem and broad leaves
 - (c) Mountain goat - plains - long legs to run fast
 - (d) Fish - water - streamlined body and gills
67. Arrange scientific method correctly:
- (a) Question -> Hypothesis -> Observation -> Experiment -> Conclusion
 - (b) Question -> Observation -> Hypothesis -> Experiment -> Conclusion
 - (c) Experiment -> Question -> Hypothesis
 - (d) Conclusion -> Question -> Experiment

68. You find an organism - no chlorophyll, no mouth, grows on dead bread, reproduces by spores. It is:
 (a) Algae (b) Fungus
 (c) Bacteria (d) Insect
69. Why is cooking considered science in your kitchen?
 (a) Because it uses gas
 (b) Because it involves transformation of materials, heat, chemical changes that can be observed and tested
 (c) Cooking is not science
 (d) Only done by scientists
70. Why are viruses confusing for classification of living vs non-living?
 (a) They grow like plants
 (b) They show characters of living only inside host cell, but as non-living outside
 (c) They eat food
 (d) They are very big.
71. You have two beakers - one with tap water, one with salt water. Ice melts faster in salt water. What is the variable you changed?
 (a) Temperature of ice (b) Amount of water
 (c) Presence of salt - Independent variable (d) Time
72. Which is NOT a characteristic of living beings?
 (a) Need for food (b) Growth
 (c) Not responding to stimuli (d) Respiration
73. Which material was discovered by science but was NOT present naturally in ancient times?
 (a) Wood (b) Stone (c) Plastic (d) Cotton
74. A car grows. No. But mountains grow. Then why mountains are non-living?
 (a) Mountains grow by accumulation of material externally
 (b) Mountains don't grow
 (c) Both are living
 (d) Car is living
75. Science is connected to all subjects. Example: Making a bridge needs:
 (a) Only Science & Math
 (b) Science + Maths + Social Science
 (c) Only Maths
 (d) No connection

MATHEMATICS

76. The number of 3-digit numbers that can be formed using the digits 3, 5 and 7 without repetition is ____.
 (a) 3 (b) 4 (c) 5 (d) 6
77. The difference between the greatest and the smallest numbers formed by all the digits 2, 3, 5, and 7 is $XYZX$, where X, Y, Z are digits, then X is ____.
 (a) 5 (b) 8 (c) 9 (d) 10
78. Which of the following is true?
 A: $-12 + (-15)$ B: $-16 - (12)$ C: $-14 - (-12)$
 (a) $B > C > A$ (b) $A + B > C$ (c) $C > A > B$ (d) $A < B < C$
79. $5 \div 5 \div 5 =$ _____.
 (a) 5 (b) $\frac{1}{5}$ (c) 25 (d) $\frac{1}{25}$
80. Which of the following is a complementary angle to 36° ?
 (a) 36° (b) 64° (c) 72° (d) 54°
81. The angle between the hours hand and the minutes hand of a clock at 6'O clock is a/an _____.
 (a) right angle (b) acute angle (c) straight angle (d) obtuse angle
82. Acute angles are the angles whose measure is _____.
 (a) Less than 90° (b) Less than 180°
 (c) Equal to 90° (d) Greater than 180°

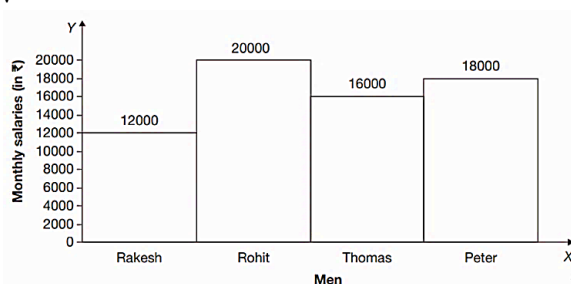
83. Determine which angle is greater?



- (a) $\angle BOY$ (b) $\angle YOA$ (c) $\angle BOA$ (d) $\angle BOX$
84. Data which occurs most frequently in a group is called _____
 (a) Mode (b) Median (c) Mean (d) Frequency
85. In a bar graph, a bar of length 3.2 cm represents 96 units, then the number of units represented by a bar graph of length 2.1 cm is _____
 (a) 63 units (b) 9.6 units
 (c) 46 units (d) Can not determine

Direction for questions from 86 to 88: Select the correct alternative from given choices.

The bar graph given below shows the monthly salaries of four men. Study the graph carefully and answer the questions that follow



86. What is the difference between Rohit's and Peter's salaries?
 (a) ₹2000 (b) ₹4000 (c) ₹6000 (d) ₹8000
87. If Rakesh spends ₹10000 of his salary and saves the rest, how much will he save in a year?
 (a) ₹20000 (b) ₹24000 (c) ₹28000 (d) ₹32000
88. If Thomas's salary is increased by ₹2000, then which person's salary will be equal to that of Thomas?
 (a) Rakesh (b) Rohit (c) Peter (d) Thomas
89. Find the sum of 1.4 and 2.23.
 (a) 3.60 (b) 3.63 (c) 3.27 (d) 2.37
90. What part of the given figure is shaded?



- (a) $\frac{2}{3}$ (b) $\frac{1}{3}$ (c) $\frac{1}{2}$ (d) $\frac{2}{5}$
91. Sujith travels one-third of a distance. If the total distance that he needs to cover is 12 km, then find the remaining distance that he would have travelled (in km).
 (a) 2 (b) 4 (c) 6 (d) 8
92. $\frac{2}{3} \div \frac{4}{3} \times \frac{2}{3} + 1 =$
 (a) $\frac{7}{3}$ (b) $\frac{4}{3}$ (c) $\frac{3}{10}$ (d) $\frac{6}{17}$
93. Simplify: $1\frac{2}{15} + 2\frac{2}{15} + 3\frac{2}{15} + \dots + 100\frac{2}{15}$
 (a) $\left(\frac{15190}{3}\right)$ (b) $\left(\frac{15191}{3}\right)$ (c) $\left(\frac{15120}{2}\right)$ (d) $\left(\frac{16023}{2}\right)$
94. Which of the following is not a square number?
 (a) 64 (b) 49 (c) 50 (d) 81
95. The HCF of which of the following pairs of composite numbers is different from that of the others?
 (a) 12,18 (b) 24,30 (c) 18,30 (d) 18,45
96. The LCM of a and b is 220. Which of the following can be the HCF of a and b ?
 (a) 33 (b) 15 (c) 20 (d) 12

97. Which of the following is divisible by 8?

(a) 7248882

(b) 836486

(c) 92304

(d) 726436

98. Which number is not a triangular number?

(a) 3

(b) 6

(c) 7

(d) 15

99. The dots in the given fig are represents



(a) Odd Numbers

(c) Prime Number

(b) Even Numbers

(d) None of these

100. Complete the Following Sequence 2,5,10,17,26, ?

(a) 30

(b) 36

(c) 37

(d) 40