English

Direction for Q1 and Q2: Select the correct Indirect speech of the given sentences:

Q1. I said to her, "Let us sit in the shade."
(a) I told her let us sit in the shade.
(b) I proposed to her that we should sit in the shade.
(c) I asked her that let us sit in the shade.
(d) I requested her that let us sit in the shade.

Q2. "Are your examinations over?", asked the teacher.
(a) The teacher asked him that were his examination over.
(b) The teacher asked whether his examinations were over.
(c) The teacher asked if his examinations over.
(d) The teacher said him that are his examinations over.

Direction for Q3 and Q4:
Fill in the blanks by choosing the correct determiners:

Q3. It was an unexciting match. _____ team played well.
(a) Either
(b) Both
(c) All
(d) Neither

Q4. The doctor advised him to rest for _____ days.
(a) few
(b) a few
(c) the few
(d) None of these

Q5. By tea time our team _____ 300 runs.
(a) would be scoring

(b) have scored
(c) had scored
(d) would have scored

Q6. He _____ in this mall for two hours.
(a) is shopping
(b) has shopped
(c) has been shopping
(d) will be shopping

Q7. I am not envious _____ your success.
(a) from
(b) of
(c) with
(d) to

Q8. The world was horrified _____ the murder of Mrs. Indira Gandhi.
(a) from
(b) since
(c) on
(d) at

Q9. A large number of tourists visited zoo and _____ it difficult to maintain them.
(a) make
(b) makes
(c) making
(d) made

Q10. He as well as his classmates _____ hardworking.
(a) are
(b) am
(c) is
(d) none of these

Q11. We _____ to respect our elders.
(a) should
(b) ought
(c) must
(d) dare

Q12. She _____ sit in the sun and talk all day when she was in Delhi.
(a) would

(b) will

(c) can

(d) none of these

Q13. Live well _____ you may die well.

(a) as

(b) so

(c) so that

(d) none of these

Direction Q14-15: In the following questions, a sentence has been given in Active/Passive Voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active Voice and mark your answer in the Answer Sheet.

Q14. The agreement between the management and the workers was drafted by the advisory board.

(a) The advisory board drafted the agreement between the management and the workers.

(b) The advisory board had drafted the agreement between the management and the workers.

(c) The advisory board is drafting the agreement between the management and the workers.

(d) The agreement between the management and the workers is being drafted by the advisory board.

Q15. Put up the tent.

(a) The tent is being put up.

(b) Let the tent being put up.

(c) The tent has been put up

(d) Let the tent be put up.

Maths

Q16. Fill in the blanks:

-   All rational numbers, except P are closed under division.
-    Q is the multiplicative identity for rational number.
-   There are R rational numbers between any two rational numbers.

	P	Q	R
(a)	1	1	Finite
(b)	1	0	Infinite
(c)	0	1	Infinite
(d)	0	0	Finite

Q17. Find the value of:

$$\left[35.7 - \left(3 + \frac{1}{3+\frac{1}{3}}\right) - \left(2 + \frac{1}{2+\frac{1}{2}}\right)\right]$$

(a) 30

(b) 34.8

(c) 36.6

(d) 41.4

Q18. Solve for x:

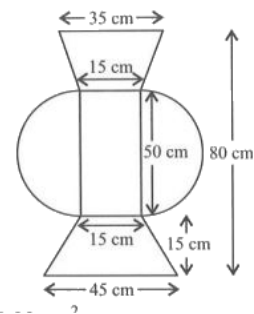$$\frac{x-4}{3} + \frac{2x-3}{35} = \frac{5x-32}{9} - \frac{x+9}{28}$$

(a) 18

(b) 19

(c) 17

(d) 16

Q19. If $\sqrt{\sqrt[3]{x} \times 0.000009} = 0.3$, then the value of $\sqrt{x}$ is _____

(a) 27

(b) 81

(c) 9

(d) 18

Q20. Find the area of the given figure (not drawn to scale)

(a) 3339.29cm²

(b) 3539.29cm²

(c) 4506.75cm²

(d) 5967.47cm²

Q21. If $x^2 + \frac{1}{x^2} = \frac{17}{4}$, then find the value of

$$\frac{2}{5}\left(x + \frac{1}{x}\right) + \left(x - \frac{1}{x}\right)$$

(a) $\frac{3}{2}$

(b) $\frac{25}{4}$

(c) $\frac{5}{2}$

(d) $\frac{9}{4}$

Q22. If $4^x = 5^y = 20^z$, then

(a) $x = \frac{yz}{y+z}$

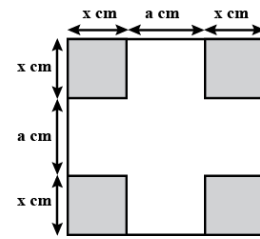(b) $y = \frac{xz}{x+z}$

(c) $z = \dfrac{xy}{x+y}$

(d) NOT

Q23. The formula for the area, A sq. cm of the white cross is:

(a) A = 4ax+4ay+a²

(b) A = 2ax+2ax²+a²

(c) A = 2ax+4ax²+a²

(d) A = 4ax+a²

Q24. A woman bought two packs of toffees, with the same number of toffees in each pack. She bought the first pack at 25 paise per toffee and the second pack at 3 toffees for 65 paise. She mixed them together and sold at Rs. 3.50 a dozen. What is her gain percent?

(a) 15%

(b) 25%

(c) $16\dfrac{2}{3}$%

(d) 12%

Q25. If $2a - \dfrac{1}{2a} = 3$, evaluate $16a^4 + \dfrac{1}{16a^4}$

(a) 123

(b) 119

(c) 117

(d) 121

Q26. Which of the following is not true?

(i) A polygon is a convex polygon if the line segment joining any two points inside it lies completely inside the polygon.

(ii) If a polygon has a position of its diagonal in its exterior then it is known as a concave polygon.

(iii) A polygon having all sides and all angles equal is a regular polygon.

(iv) Square is a regular polygon

(a) only (ii)

(b) only (ii) and (iv)

(c) only (i) and (iii)

(d) NOT

Q27. If x and y are whole numbers such that $y^x = 19,683$ and y > x and $1 < x < 4$, then $\sqrt[x]{y}$ is

(a) 13

(b) 17

(c) 3

(d) 9

Q28. The population of a country is 3.2×10^6. If there are 8×10^5 children, then find the number of adults.
(a) 3×10^3
(b) 8×10^6
(c) 2.4×10^6
(d) 2.4×10^5

Q29. If A : B = 5 : 6 and B:C = 7 : 8, then by approximately what percent is C more than A?
(a) 36%
(b) 40%
(c) 37.14%
(d) 48.23%

Q30. A man invested 2/5 of his capital at 8% p.a., 3/8 of his capital at 10% p.a. and the remaining at 12% p.a. If his annual income from simple interest is Rs. 965, then his capital is _____
(a) Rs. 8000
(b) Rs. 9000
(c) Rs. 10000
(d) Rs. 11000

Physics

Q31. The air in the path of lightning goes upto a temperature of about
(a) 300°C
(b) 3000°C
(c) 300000°C
(d) 30000°C

Q32. An iron block of sides 50cm x 8cm x 15cm has to be pushed along the floor. The force required will be minimum when the surface in contact with ground is:
(a) 8cm x 15cm surface
(b) 5cm x 15cm surface
(c) 8cm x 5cm surface
(d) force is same for all surfaces

Q33. What is the value of sliding friction for an object which requires 7N of force to move it from rest?
(a) 7N
(b) Greater than 7N

(c) Less than 7N

(d) 14N

Q34. The time in seconds taken for 20 oscillations note down in a simple pendulum experiment are 38.6, 40.0, 41.5, 42.8 and 39.4, the time period of the given simple pendulum is _____ s.

(a) 2.5

(b) 2.2

(c) 2.0

(d) 10.1

Q35. The persistence of vision of the eye is by:

(a) $\frac{1}{16}$ second

(b) $\frac{1}{10}$ second

(c) $\frac{1}{26}$ second

(d) $\frac{1}{100}$ second

Chemistry

Q36. Which of the following mixture is called producer gas?

(a) Nitrogen and carbon monoxide

(b) Hydrogen and Nitrogen

(c) Nitrogen and carbon-dioxide

(d) Hydrogen and carbon-dioxide

Q37. The head of a safety matchstick contains:

(a) Antimony trisulphide and potassium chlorate

(b) Antimony chloride and potassium sulphide

(c) Antimony carbonate

(d) Antimony sulphide

Q38. The chemical added to LPG to detect its leakage is:

(a) Methyl cercaptan

(b) Ethyl mercaptan

(c) Propyl mercaptan

(d) None of these

Q39. Which zone of a candle flame is the hottest:

(a) Non-luminous zone

(b) Dark zone

(c) Lumious zone

(d) None of these

Q40. Which gas is produced on Anode when electricity is passed through brine solution.
    (a) Hydrogen
    (b) Nitrogen
    (c) Oxygen
    (d) Chlorine

Biology

Q41. What is the function of the scrotum in the human male reproductive system?
    (a) To store sperms
    (b) To produce urine
    (c) To produce sperms
    (d) To protect the testes

Q42. Fertilisation is external in:
    (a) birds and fish
    (b) amphibians and birds
    (c) reptiles and fish
    (d) fish and amphibians

Q43. Which of the following glands is nearest to heart?
    (a) Thyroid
    (b) Pancreas
    (c) Thymus
    (d) Adrenal

Q44. Bacteria which convert the dissolved nitrate of the soil into free nitrogen are:
    (a) Nitrate bacteria
    (b) Nitrifying bacteria
    (c) Denitrifying bacteria
    (d) Anmonifying bacteria

Q45. BCG vaccine is used to prevent_____
    (a) Tetanus
    (b) Tuberculosis
    (c) Cancer
    (d) AIDS

Reasoning

Q46. Complete the series:

12,6.5,7.5,12.75,27.50,?

(a) 68.75

(b) 68.25

(c) 70.75

(d) 71.25

Q47. 'Ophthalmic' is related to 'Eye' in the same way as 'Rickets' is related to:

(a) Kidney

(b) Nose

(c) Bone

(d) Heart

Q48. In the following question, select the odd word pair from the given alternatives:

(a) Inch

(b) Ounce

(c) Centimeter

(d) Yard

Q49. In a certain language FEED is coded as 47, MEET is coded as 118, then TREE is coded as what?

(a) 91

(b) 81

(c) 101

(d) 111

Q50. Which one of the given rules the number 70 follows:

(a) n^3+4n

(b) $2n^3+2n$

(c) $n^3+\dfrac{3n}{2}$

(d) n^3+5n

Q51. There are deer and peacocks in a zoo. By counting heads they are 80. The number of their legs is 200. How many peacocks are there?

(a) 20

(b) 30

(c) 50

(d) 60

Q52. On which day India got Freedom?
    (a) Monday
    (b) Friday
    (c) Sunday
    (d) Tuesday

Q53. If a clock strike once at 1 O'clock. Twice at 2 O'clock and so on. How many times will it strike in a day?
    (a) 156
    (b) 144
    (c) 140
    (d) 142

Q54. First bunch of bananas has ¼ again as many bananas as a second bunch. If the second bunch has 3 bananas less than the first bunch, then the number of bananas in the first bunch is:
    (a) 9
    (b) 10
    (c) 12
    (d) 15

Q55. 'A+B' means that A is the father of B 'A-B' means that A is wife of B, 'A x B' means that A is the brother of B. 'A÷B' means that A is the daughter of B. Which of the following means P is the sister-in-law of Q?
    (a) R - P x Q
    (b) R + P x Q
    (c) P – R x Q
    (d) P – R ÷ Q

Q56. How many combinations of two-digit numbers having 8 can be made from the following numbers?
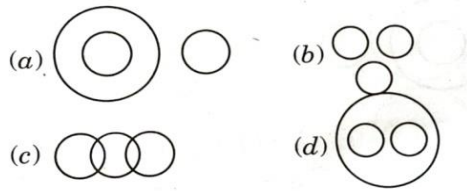   8,5,2,1,7,6
    (a) 10
    (b) 6
    (c) 9
    (d) 11

Q57. The total strength of the class is 90 and the number of girls is twice that of boys. Suraj is ranked 14th from the top. Suppose there are 10 girls ahead of Suraj. Find the number of boys after Suraj in the ranking order.
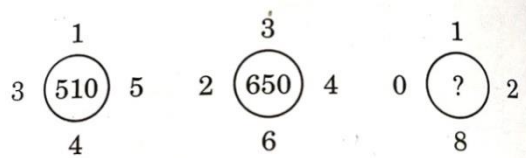   (a) 25

(b) 25

(c) 26

(d) 28

Q58. Profit, Dividend, Bonus?

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

Q59. Which one will replace the question mark?

(a) 660

(b) 670

(c) 610

(d) 690

Q60. Below are depicted the three different positions of a dice. Find the number of dots on the face opposite to the face with one dot.

(a) 2

(b) 3

(c) 4

(d) 6

(I)   (II)   (III)