## INSTRUCTIONS

1.   This question paper booklet contains **FIVE** sections. **Section "A"** Mathematics contains **50** questions of **4** marks each. **Section "B"** English, **Section "C"** General Science, **Section "D"** Social Studies and **Section "E"** Intelligence contain **25** questions each, of **2** marks per question. In all, the paper consists of **150** questions for a total of **400** marks. Answer all questions.

2.   Duration of the test is 3 hours. (180 minutes)

3.   The question paper booklet is in English only, for all the candidates.

4.   The question paper booklet is of **28** pages. Please check and ensure that the question paper booklet is complete and contains all the pages.

5.   Answer all questions in the OMR answer sheet only.

6.   The OMR Answer Sheet is inside this Question Paper Booklet. When you are directed to open the Question Paper Booklet, take out the OMR Answer Sheet and fill in the particulars carefully with Blue/ Black ball point pen only.

7.   Darken only one circle as your correct answer for each question. If you darken more than one circle for the same question, your answer will be treated as invalid.

8.   There is no negative marking for a wrong answer.

9.   Do not make unnecessary marks on the OMR answer sheet or fold or attempt to deface it. If you do so, your answer sheet will not be evaluated.

10. Use Blue/Black ball point pen only for writing particulars on this page and for writing answers. Do not use pencil.

11. Rough work is to be done on the space provided for this purpose in the Question Paper Booklet only and not on the OMR sheet.

12. On completion of the test, hand over the OMR Answer Sheet to the Invigilator before leaving the Room/Hall.

13. You are allowed to take away this Question Paper Booklet with you.

14. The CODE for this Booklet is **D**. Make sure that the CODE printed on the OMR Answer Sheet is the same as that on this Question Paper Booklet. In case of discrepancy, report the matter immediately to the Invigilator for replacement of both the Question Paper Booklet and the Answer Sheet.

15. Do not write your Roll No. anywhere else except in the specified space in the Question Paper Booklet / OMR Answer Sheet.

16. Do not use white fluid for carrying out any correction on the OMR Answer Sheet.

SECTION - 'A'

MATHEMATICS

1. The mean of 1, 3, 4, 5, 7 and 10 is m. The observations 3, 2, 4, 2, 3, 3 and p have mean $(m - 2)$ and median q. Find q.

   (1) 2   (2) 3   (3) 4   (4) 3.5

2. If $(3a + 4b) = 16$ and $ab = 4$, then find the value of $(9a^2 + 16b^2)$.

   (1) 160   (2) 100   (3) 120   (4) 140

3. A cistern has two inlets A and B which can fill it in 12 minutes and 15 minutes respectively. An outlet C can empty the full cistern in 10 minutes. If all the three pipes are opened together in the empty cistern, then the time taken to fill the cistern completely is :

   (1) 20 minutes   (2) 10 minutes   (3) 15 minutes   (4) 5 minutes

4. If $\sqrt{1 + \dfrac{27}{169}} = 1 + \dfrac{x}{13}$ then x equals

   (1) 1   (2) 3   (3) 5   (4) 7

5. The sum of $0.\overline{3}$ and $0.\overline{2}$ is

   (1) 5/99   (2) 5/9   (3) 5/10   (4) 5/100

6. Divya purchased 11 books for ₹ 10 and sold all books at 10 for ₹ 11. Her profit/loss percent is

   (1) 10%   (2) 11%   (3) 21%   (4) 100%

7. In the given figure, *ABCD* is a square. A line segment *DX* cuts the side *BC* at *X* and the diagonal *AC* at *O* such that $\angle COD = 115°$ and $\angle OXC = x°$
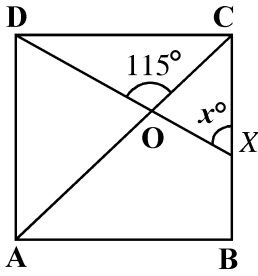
The value of *x* is

(1) 40 (2) 70 (3) 80 (4) 85

8. If the side of a chess board is smaller than its perimeter by 42 cm, then find the area of the chess board.

(1) 100 cm^2 (2) 144 cm^2 (3) 196 cm^2 (4) 180 cm^2

9. One of the factors of $x^2 + \dfrac{1}{x^2} + 2 - 2x - \dfrac{2}{x}$ is

(1) $x - \dfrac{1}{x}$ (2) $x + \dfrac{1}{x} - 1$ (3) $x + \dfrac{1}{x}$ (4) $x^2 + \dfrac{1}{x^2}$

10. The number of non-perfect square numbers between $(698)^2$ and $(699)^2$ is

(1) 1397 (2) 1398 (3) 1395 (4) 1396

11. A card is drawn at random from a well shuffled deck of 52 cards. The probability that it is neither a heart nor a red king is

(1) 37/52 (2) 19/26 (3) 19/52 (4) 26/52

12. Which of the following can give the result as 'the square of a natural number '*n*' ' ?

(1) Sum of the squares of first n natural numbers.

(2) Sum of the first *n* natural numbers.

(3) Sum of the first (*n* − 1) natural numbers.

(4) Sum of the first '*n*' odd natural numbers.

13. Which of the following is not a random experiment ?

(1) Tossing a coin.

(2) Rolling a dice.

(3) Choosing a card from a deck of 52 cards.

(4) Throwing a stone from a roof of a building.

14. In the number A4b, A is the smallest two digit perfect cube and A's unit place digit exceeds b by 3. Then the sum of the number and its cube root is

(1) 2713   (2) 2754   (3) 2750   (4) 2758

15. Which of the following can be another name of a cylinder ?

(1) A triangular prism.   (2) A rectangular prism.

(3) A pentagonal prism.   (4) A circular prism.

16. Radha invested ₹ 1600 on compound interest for 2 years. She received ₹ 1764 after the specified period. Find the rate of interest per annum.

(1) 7%   (2) 6%   (3) 5%   (4) 4%

17. A person, standing on a railway platform, noticed that a train took 21 seconds to completely cross the platform which is 84 m long and it took 9 seconds in crossing him. The speed of the train is

(1) 25.2 km/hr   (2) 32.4 km/hr   (3) 50.4 km/hr   (4) 75.64 km/hr

18. A contractor can complete a certain piece of work, with certain number of men, in 9 days. But 6 of them remained absent from the very first day, so the rest could finish the work in 15 days. How many men were originally employed ?

(1) 12   (2) 15   (3) 18   (4) 24

19. The sum of additive inverse and multiplicative inverse of 2/9 is

(1) 9/2   (2) 2/9   (3) 18/77   (4) 77/18

20. The standard form for 0.000064 is

(1) 64×10^4 (2) 64×10^{-4} (3) 6.4×10^5 (4) 6.4×10^{-5}

21. Select the INCORRECT statement.

(1) Every rectangle is a parallelogram.

(2) A quadrilateral can be drawn if all four sides and one angle is known.

(3) Triangle is a polygon whose sum of exterior angles is double the sum of interior angles.

(4) If diagonals of a quadrilateral are equal, it must be a square.

22. The number of sides of a regular polygon with interior angle 162° will be

(1) 18   (2) 20   (3) 25   (4) 24

23. Out of the following numbers which one is known as Hardy-Ramanujan Number ?

(1) 1297   (2) 1729   (3) 1927   (4) 7219

24. If

$$\begin{array}{r} 1 \quad y \\ +x \quad y \\ \hline z \quad 6 \end{array}$$

where z and y are single–digit numbers such that $z - y = 3$ then the value of y and z respectively are :

(1) 3, 6   (2) 6, 9   (3) 5, 4   (4) 4, 5

25. When two unbiased dice are rolled together, the probability of getting both same outcomes is :

(1) 0   (2) $\dfrac{1}{36}$ (3) $\dfrac{5}{36}$ (4) $\dfrac{6}{36}$

26. Number of cuboids with dimensions 8cm × 15cm × 20cm stacked together to form a cube is

(1) 100   (2) 90   (3) 80   (4) 60

27. A well with 10 m inside diameter is dug 14 m deep. Earth taken out of it is spread all around it to make an embankment of height $4\dfrac{2}{3}$ m. The width of the embankment is

(1) 5 m   (2) 4 m   (3) 4.3 m   (4) 6 m

28. Two right circular cones of equal curved surface areas have their slant heights in the ratio of 3 : 5. Find the ratio of their respective radii.

(1) 5 : 3 (2) 5 : 7 (3) 8 : 3 (4) 3 : 5

29. X is a two-digit number. Y is the number obtained on reversing the digits of X. Which of the following is true ?

(1) $X + Y$ is divisible by 10. (2) $X - Y$ is divisible by 6.

(3) $X - Y$ is divisible by 9. (4) $X + Y$ is divisible by 8.

30. The following bar graph shows the number of students studying various subjects in a college. Study the bar graph carefully and answer the following question.
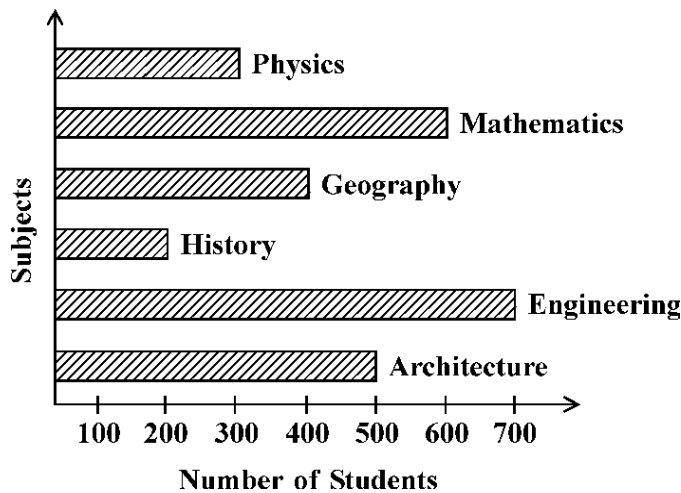
The ratio of the number of students studying History to that of the students studying Architecture is :

(1) 1 : 2 (2) 3 : 4 (3) 2 : 7 (4) 2 : 5

31. In the given figure, $PQ \parallel RS, \angle PXM = 50°$ and $\angle MYS = 120°$, find the value of x if reflex $\angle XMY$ is $x - 20°$.
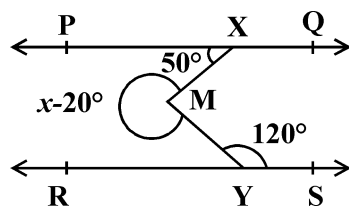
(1) 190° (2) 270° (3) 280° (4) 250°

32. Three sides of a triangular field are of lengths 15 m, 20 m and 25 m. Find the cost of sowing seeds in the field at the rate of ₹ 5 per sq. m.

(1) ₹ 600   (2) ₹ 150   (3) ₹ 750   (4) ₹ 450
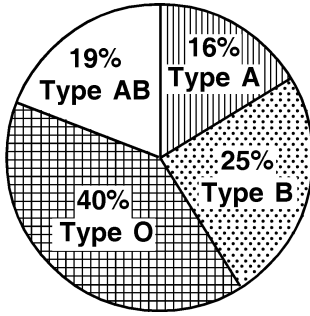
33. The angles of a quadrilateral are in the ratio 6 : 7 : 8 : 9, then which of the following can be concluded ?

(1) Exactly two angles are obtuse.   (2) Two pairs of angles are supplementary.

(3) Both (1) and (2)   (4) One of these angles is a right angle.

34. The pie chart below shows the percentages of blood types for a group of people.

If total number of people with blood types A or B is 82, then the number of people with blood types AB or O is

(1) 100   (2) 80   (3) 108   (4) 118

35. Which of the following is true ?

(1) $0.09 > 7/8$ (2) $6\% < 0.09$

(3) $8.0 \times 10^{-3} > 6\%$ (4) $7/8 < 9 \times 10^{-3}$

36. Shally buys some chocolates at the rate of ₹ 10 per chocolate. She also buys an equal number of candies at the rate of ₹ 5 per candy. She makes 20% profit on chocolates and 8% profit on candies. At the end of the day, all chocolates and candies are sold out and her profit is ₹ 240. The number of chocolates she had purchased is

(1) 100   (2) 90   (3) 150   (4) 200

37. Which of the following graphs cannot be a time - temperature graph ?

(1) [graph: Temperature vs Time]   (2) [graph: Temperature vs Time]   (3) [graph: Temperature vs Time]   (4) [graph: Temperature vs Time]
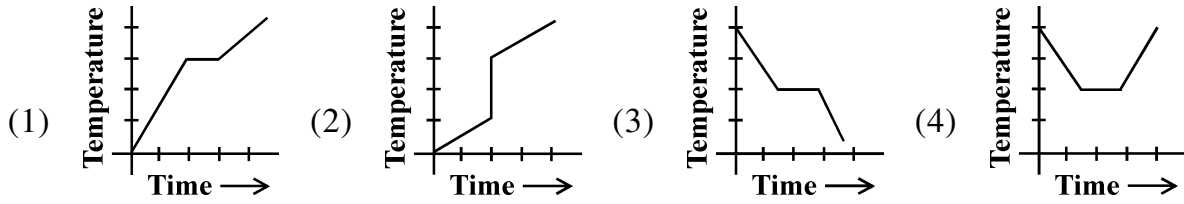
38. Which of the following rational numbers is greater than p, if $p = \dfrac{5}{7}$?

(1) $\dfrac{1}{p-1}$ (2) $\dfrac{1+p}{p}$ (3) $\dfrac{p}{p-1}$ (4) $\dfrac{p-1}{p+1}$

39. A wrist watch with MRP ₹ 5000 is available in two showrooms at different offers. First one is offering additional 40% off after a discount of 50% on MRP. Second is offering 80% discount on MRP ₹ 5000. The difference in two selling prices is

(1) ₹ 400 (2) ₹ 500 (3) ₹ 1000 (4) ₹ 1500

40. If x, y and z are positive real numbers and a, b and c are rational numbers, then the value of

$$\frac{1}{1+x^{b-a}+x^{c-a}} + \frac{1}{1+x^{a-b}+x^{c-b}} + \frac{1}{1+x^{b-c}+x^{a-c}} \text{ is}$$

(1) 1 (2) x^{abc} (3) 0 (4) x

41. If HCF and LCM of two terms a and b are x and y respectively and $a+b = x+y$, then $x^2 + y^2 = ?$

(1) $a^2 - b^2$ (2) $2a^2 + b^2$ (3) $a^2 + b^2$ (4) $a^2 + 2b^2$

42. If $2^x + 2^x + 2^x = 192$, then the value of x is

(1) 2 (2) 6 (3) 5 (4) 3

43. The coordinates of a point on the *y*-axis which is at perpendicular distance of 4 units in the positive direction from origin are :

(1) (0, 0) (2) (0, –4) (3) (4, –4) (4) (0, 4)

44. There are 42 students in a class. Out of these, 3/4 of the boys and 2/3 of the girls come to school by bus. The total number of boys and girls of the same class who come to school by bus is 30. How many boys are there in the class ?

(1) 20 (2) 24 (3) 26 (4) 16

45. The sum of three consecutive multiples of 7 is 357. The smallest multiple is

(1) 112 (2) 126 (3) 119 (4) 116

46. How many coins, 1.4 cm in diameter and 0.4 cm thick, are melted to form a right circular cylinder of height 16 cm and diameter 3.5 cm ?

(1) 200 (2) 150 (3) 250 (4) 300

47. If a square with each side '*a*' is joined from opposite sides to form a cylinder, then area of each circular end (ignoring units) is

(1) a^2 (2) $a^2/4\pi$ (3) a^2/π (4) $a^2/4$

48. Two complementary angles are in the ratio 13 : 5, then the angles respectively are :

(1) 13°, 5° (2) 125°, 55° (3) 65°, 25° (4) 65°, 35°

49. Which of the following cannot be true for a polyhedron ?
(where F = number of faces, V = number of vertices, E = number of edges)

(1) $V = 4, F = 4, E = 6$ (2) $V = 6, F = 8, E = 12$

(3) $V = 20, F = 12, E = 30$ (4) $V = 4, F = 6, E = 6$

50. If $2^x = 3^y = 6^z$ then $z =$

(1) $\dfrac{x+y}{xy}$ (2) $\dfrac{xy}{x+y}$ (3) $2xy$ (4) x/y

SECTION - 'B'

ENGLISH

Read the poem given below.

A Minor Bird

I have wished a bird would fly away,

And not sing by my house all day;

Have clapped my hands at him from the door

When it seemed as if I could bear no more.

The fault must partly have been in me.

The bird was not to blame for his key.

And of course there must be something wrong

In wanting to silence any song.

— Robert Frost

On the basis of your understanding of the poem, answer the following questions.

51. Choose the quote that best captures the central idea of the poem.

(1) "A bird doesn't sing because it has an answer. It sings because it has a song."

(2) "Like a bird singing in the rain, let grateful memories survive in times of sorrow". – R.L. Stevenson.

(3) "People are not disturbed by things but by the view they take of them". – Epictetus.

(4) "People who are innately funny are innately disturbed." – Keenen Ivory Wayans.

52. Which of the following emotions are expressed in the first stanza ?

(1) excitement   (2) arrogance   (3) irritation   (4) elation

53. Which of the following statements is NOT TRUE for the poem ?

(1) The poem is written in First person and a narrative style.

(2) The poem ends with a philosophical idea that acceptance of Nature and its elements is a must.

(3) The poem gives a message that insignificant things leave a deep impact on one's soul.

(4) The poem is rich in imagery.

54. The use of the word 'minor' bird in the title shows

    (1)   the size of the bird was small

    (2)   insignificance with which man regards nature

    (3)   the bird was under age

    (4)   bird's existence in nature is of less significance

55. The rhyme scheme of the poem is

    (1)   abab   (2)   aabb   (3)   abca   (4)   abbb

Choose the correct options to fill in the blanks.

56. You _____ consult the Thesaurus if you need synonyms for those words.

    (1)   had to   (2)   need to   (3)   used to   (4)   might

57. Everybody _____ keen to participate in the Nukkad Natak.

    (1)   is   (2)   are   (3)   were   (4)   has

58. I have seen _____ of his work to know that he is ready for a promotion.

    (1)   few   (2)   a few   (3)   several   (4)   enough

59. A lot of people want to become successful entrepreneurs, but only _____ make the grade.

    (1)   few   (2)   not much   (3)   very little   (4)   any

60. The boy said to them, "Let me work now."
The boy requested them _____.

    (1)   to let him work now   (2)   to let him work then

    (3)   if he could work then   (4)   let me work now

61. Some of these facts _____ incorrect.

    (1)   is   (2)   are   (3)   has been   (4)   had been

62. "Don't waste your money.", she said.
She told the boys _____.

    (1)   don't waste your money   (2)   not to waste any money

    (3)   to not waste their money   (4)   not to waste their money

63. At this time tomorrow, we _____ our project details to our teacher.

   (1) will have presenting   (2) have been presenting

   (3) shall be presenting   (4) had been presenting

64. Each of the suspected men _____ arrested.

   (1) was   (2) were   (3) have   (4) had

65. Only one of the boys _____ not done the homework.

   (1) can   (2) could   (3) has   (4) have

66. Which of the following is an imperative sentence ?

   (1) May God bless you, my friend!

   (2) They were not invited to the party.

   (3) Open the windows.

   (4) Creativity is allowing yourself to make mistakes.

67. Identify the predicate in the following sentence.

He thinks that he has finished the course.

   (1) He   (2) thinks

   (3) that he has finished the course   (4) thinks that he has finished the course

68. In which of the following sentences does the verb agree with its subject ?

   (1) What time <u>does</u> the news <u>starts</u> ?

   (2) What time <u>does</u> the news <u>start</u> ?

   (3) What time <u>do</u> the news <u>start</u> ?

   (4) What time <u>do</u> the news <u>starts</u> ?

69. Analogy is a comparison between one thing and another, typically for the purpose of explanation or clarification. Which of the following is the correct analogy ?

   (1) Composer is to music as flowers are to poem.

   (2) Paw is to dog as hoof is to horse.

   (3) Branch is to tree as day is to hour.

   (4) Inside is to house as pale is to bright.

70. Choose the option that has the right rearrangement of the following words to make a meaningful sentence.

pollution health noise both affects behaviour and

(1) Health affects both behaviour and pollution.

(2) Behaviour affects health and noise pollution.

(3) Pollution affects both behaviour, noise and health.

(4) Noise pollution affects both behaviour and health.

71. Ramesh knocked at the door thrice <u>but</u> no one answered. The word 'but' as used in the sentence is a/an :

(1) preposition   (2) conjunction

(3) verb   (4) adverb

72. Choose the option that has the right rearrangement of the following words to make a meaningful sentence.

planning poor rise urban give may pollution to noise

(1) Poor planning may give rise to urban noise pollution.

(2) Urban noise pollution may give rise to poor pollution.

(3) Poor urban planning may give rise to noise pollution.

(4) Noise pollution may give rise to poor urban planning.

73. Which of the following sentences is in simple past tense ?

(1) The baby broke the glass.   (2) The baby breaked the glass.

(3) The baby has broken the glass.   (4) The baby had broken the glass.

74. The phrase 'weather the storm' means

(1) a difficult situation   (2) to go out on a stormy day

(3) to face challenges   (4) an easy situation

75. Which of the given options has the words in an alphabetical order ?

(1) Peruvian, Parisian, Portuguese, Prussian, Polish, Paraguayan

(2) Parisian, Paraguayan, Peruvian, Portuguese, Polish, Prussian

(3) Paraguayan, Parisian, Peruvian, Polish, Portuguese, Prussian

(4) Peruvian, Polish, Portuguese, Paraguayan, Parisian, Prussian

SECTION - 'C'

GENERAL SCIENCE

76. Crop rotation is performed to

   (a)   Improve the fertility of soil

   (b)   Save nitrogenous fertilizers

   (c)   Help in weed control and pest control

   (1)   Only (a) and (b)   (2)   Only (a) and (c)

   (3)   Only (b) and (c)   (4)   (a), (b) and (c)

77. A rubber sucker when pressed on a surface sticks to it because

   (1)   Gravitational pull acts on it.

   (2)   Atmospheric pressure acts on it.

   (3)   Rubber sucker has some glycerine in it.

   (4)   Atmospheric pressure does not act on it.

78. Refer to the given figures (P and Q). How do reproductive cells produce in P differ from those produced in Q in terms of production and their modes of storage ?

P   **Q**

   (1)   Mature cells of P can get stored for longer periods in reproductive tract whereas in Q only immature cells remain stored.

   (2)   P produces fewer reproductive cells than Q does.

   (3)   Reproductive cells produced by P do not show mobility.

   (4)   Q produces reproductive cells for longer period in an individual's life span than P does.

79. Which of the following statements about plastics is true ?

   (i)   All plastics do not have same arrangement of monomer units.

   (ii)   Melamine resist fire and can tolerate heat better than other plastics.

   (iii)   Plastics with cross-linked monomers are also known.

   (iv)   The application of plastics is limited.

   (1)   (i) and (iii)   (2)   (iii) and (iv)

   (3)   (i), (ii) and (iii)   (4)   (i), (iii) and (iv)

80. Study the given correlation.

Heat treatment : sterilization :: Vaccination : X

What would be 'X' here ?

(1) Pasteurisation   (2) Immunisation   (3) Fertilisation   (4) Inoculation

81. It is easier to swim in sea water than in river water because

(1) Sea water is more dense than river water

(2) Sea water has waves

(3) Sea has large quantity of water

(4) Sea water is less dense than river water

82. The substance expected to have the highest ignition temperature out of the following is

(1) Kerosene   (2) Petrol   (3) Coal   (4) Alcohol

83. A small hole P is made in a piece of cardboard. The hole is illuminated by a torch as shown in the figure. The ray of light coming out of the hole falls on a mirror.
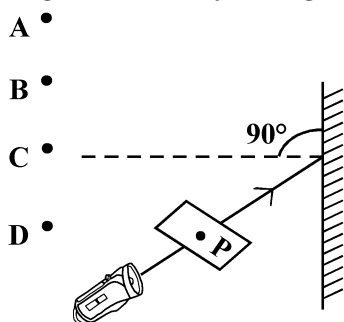
At which point should the eye be placed, so that the hole can be seen ?

(1) A   (2) B   (3) C   (4) D

84. Which of the following statements is true ?

(i)   Yellow flame are ideal for heating.

(ii) The substances which vaporize during burning give flames.

(iii) Luminous zone contains unburnt carbon particles.

(iv) The non luminous zone has highest temperature.

(1) (i), (ii) and (iii)   (2) (i), (ii) and (iv)

(3) (ii), (iii) and (iv)   (4) (i), (iii) and (iv)

85. Loudness of sound is measured in units of

(1) decibel (dB)   (2) hertz (Hz)   (3) metre (m)   (4) metre/second (m/s)

86. When the applied force is doubled on an object and the object is still at rest, then friction becomes :

(1) Doubled   (2) Halved   (3) Quadrupled   (4) Zero

87. The full form of LED is

(1) Light emitting diode   (2) Light emission diode

(3) Layer emission diode   (4) Layer electron device

88. The sex determining system in which males are XY and females are XX is found in all

(1) Multicellular organism   (2) Animals

(3) Vertebrates   (4) Mammals

89. Which type of organisms, live in the body of termites and digest wood cellulose converting it to soluble carbohydrates ?

(1) Algae   (2) Fungi   (3) Protozoa   (4) Nematoda

90. Which of the following on reshuffling gives the term that refers to the process of sowing seeds manually by sprinkling them on soil by hand ?

(1) lnigtil   (2) glnopuihg   (3) atnbrdocaigs   (4) ngiownwin

91. I am the source of synthetic polymer. I am a mixture of a number of carbon compounds, which can be separated by fractional distillation. I am

(1) Petrol   (2) Diesel   (3) Petroleum   (4) Kerosene

92. Read the following statements carefully and identify X, Y and Z respectively.

(i) X is stored under kerosene.

(ii) Y catches fire on exposure and stored in water.

(iii) Z reacts with water slowly.

(1) Na, Mg, Cu   (2) Na, P, Fe   (3) Cu, Zn, K   (4) Zn, Cu, Na

93. Metals are generally hard. Which of the following metals is an exception and can be cut with a knife ?

(1) Iron   (2) Sodium   (3) Gold   (4) Magnesium

94. A toy car released with the same initial speed will travel farthest on

(1) Muddy surface   (2) Polished marble surface

(3) Cemented surface   (4) Brick surface

95. A cell converts

    (1)   Electrical energy into chemical energy

    (2)   Chemical energy into electrical energy

    (3)   Magnetic energy into electrical energy

    (4)   Electrical energy into mechanical energy

96. A cube of side 0.2 m rests on the floor, as shown. Given that the cube has a mass of 50 kg, the pressure exerted by the cube on the floor is (take $g = 10$ N kg^{-1})
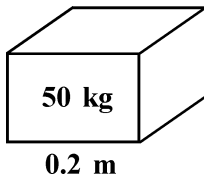
    (1)   25 Nm^{-2} (2)   250 Nm^{-2} (3)   1250 Nm^{-2} (4)   12500 Nm^{-2}

97. When an object moves closer to a concave lens, the image formed by it shifts

    (1)   Away from the lens

    (2)   First away and then towards the lens

    (3)   Towards the lens

    (4)   First towards and then away from the lens

98. Which of the following statements is incorrect regarding metamorphosis ?

    (1)   It is the process of transformation of larva into an adult through drastic changes.

    (2)   In human beings, metamorphosis does not occur because the young ones resembles the adults at the time of birth.

    (3)   Life cycle of butterflies is completed in the four stages involving egg, larva, pupa, adult.

    (4)   A tadpole that hatches out of the egg resembles the adult frog in almost all respects.

99. The loudness of sound depends on its

    (1)   Amplitude   (2)   Time period   (3)   Frequency   (4)   Speed

100. Which of the following is a mismatched pair ?

    (1)   Ovaries - Oestrogen   (2)   Testes - Testosterone

    (3)   Pancreas - Calcitonin   (4)   Adrenal glands - Corticosteroids

SECTION - 'D'

SOCIAL SCIENCE

101. Industry which processes raw material obtained from ocean is called -
  (1) Agro-based industry
  (2) Marine-based industry
  (3) Mineral-based industry
  (4) Forest-based industry

102. Rourkela steel plant is located in which state of India ?
  (1) Jharkhand (2) West Bengal (3) Odisha (4) Bihar

103. What was the reason for the hanging of sepoy Mangal Pandey ?
  (1) For refusing to use the greased cartridges
  (2) For attacking the British or his officers
  (3) For disobeying orders
  (4) For killing the soldiers

104. Which level of judiciary cannot send a person to jail _____.
  (1) Supreme Court
  (2) Nyaya Panchayat
  (3) High Court
  (4) Subordinate Court

105. What makes an object a substance or a resource ?
  (1) Utility (2) Quantity (3) Usability (4) Both (1) and (3)

106. The method used to extract oil from the earth is called _____.
  (1) Shaft Mining
  (2) Drilling
  (3) Open-cast mining
  (4) Quarrying

107. An FIR is filed with the _____.
  (1) Police (2) Court (3) Army (4) Chief Minister

108. Which of the following is not an example of ground water ?
  (1) Water flowing in rivers
  (2) Water through hand pumps
  (3) Water through submersible pumps
  (4) Water through wells

109. Forests help in maintaining a balance of _____.

    (1) Nitrogen and Carbon dioxide   (2) Oxygen and Carbon dioxide

    (3) Argon and Carbon dioxide   (4) Nitrogen and Oxygen

110. The first successful modern textile mill in India was established in :

    (1) Mumbai   (2) Chennai   (3) Ahmedabad   (4) Kanpur

111. Give an example of shaft mining.

    (1) Surface mining   (2) Deep bores

    (3) Off-shore drilling   (4) None of these

112. Civil law does not deal with _____.

    (1) Property matters   (2) Theft

    (3) Robbery   (4) Murder

113. Separation of religion from the State is referred to as _____.

    (1) Monarchy   (2) Democracy   (3) Secularism   (4) Monotheism

114. Which of the following are Fundamental Rights ?

    (1) Right to equality   (2) Right to freedom

    (3) Right against exploitation   (4) All of the above

115. The CHILD MARRIAGE RESTRATION ACT was passed in the year _____.

    (1) 1926   (2) 1928   (3) 1927   (4) 1929

116. Which one of the following is not a characteristic of minerals ?

    (1) They are created by natural processes

    (2) They have definite chemical composition

    (3) They are inexhaustible

    (4) Their distribution is even

117. Who was the first Governor General of free India ?

    (1)   C. Rajagopalachari   (2)   Dr. Rajendra Prasad

    (3)   Sardar Vallabhbhai Patel   (4)   Pt. Jawahar Lal Nehru

118. Contaminated water causes _____.

    (1)   Malaria   (2)   Dengue   (3)   Swine Flu   (4)   Jaundice

119. The President appoints _____ members of Rajya Sabha.

    (1)   12   (2)   15   (3)   14   (4)   20

120. Growing vegetables, flowers, fruits and decorative plants for commercial use is known as :

    (1)   Viticulture   (2)   Sericulture   (3)   Horticulture   (4)   Pisciculture

121. The monazite sands of Kerala are rich in :

    (1)   Uranium   (2)   Thorium   (3)   Platinum   (4)   Coal

122. What are the devotees of Vishnu called ?

    (1)   Vaishnavas   (2)   Nayanmars   (3)   Lingayats   (4)   Chishti

123. Justice Sachar Committee was set-up to look into the marginalization of _____.

    (1)   Hindus   (2)   Muslims   (3)   Sikhs   (4)   Parsis

124. Who gave the call 'Back to Vedas' ?

    (1)   Raja Rammohan Roy   (2)   Tara bai Shinde

    (3)   Jyotiba Phule   (4)   Swami Dayanand Saraswati

125. MLAs are the elected representatives of _____.

    (1)   State Legislature   (2)   Rajya Sabha

    (3)   Lok Sabha   (4)   Zila Parishad

SECTION - 'E'

INTELLIGENCE

126. Which figure will come next to continue the series ?

(1)   (2)   (3)   (4)
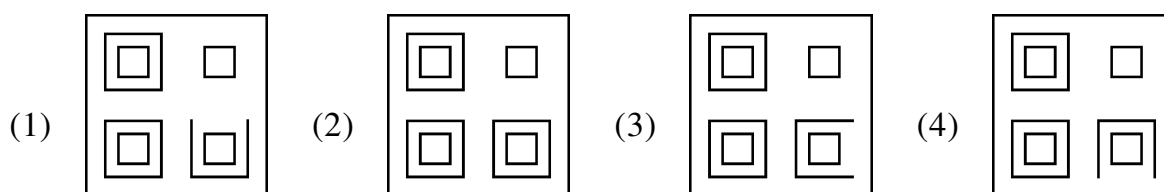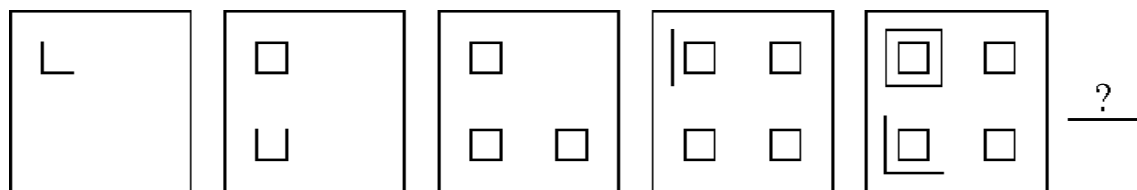
127. If the seventh day of a month is three days earlier than Friday, what day will it be on the nineteenth day of the month ?

(1) Wednesday   (2) Monday   (3) Friday   (4) Sunday

128. Mr. Das left for his office in his car. He drove 12 km towards North and then 10 km towards West. He then turned to the South and covered 4 km. Further, he turned to the East and moved 8 km. Finally, he turned right and drove 8 km. How far and in which direction is he from his point ?

(1) 2 km, West   (2) 2 km, East   (3) 4 km, North   (4) 2 km, South

129. Observe the die. If the surfaces of the below given die are reconstructed to form a perfect die as shown in the fig. How many dots lie opposite to the face having three dots ?
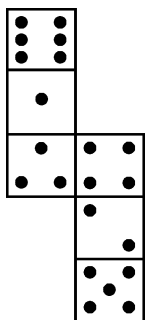
(1) 2   (2) 4   (3) 5   (4) 6

130. In a certain code 'CERTAIN' is coded as 'BFQUZJM'. How is 'MUNDANE' coded in that code ?

(1) LVMEZOD (2) NTCOMBF (3) NTOCNBF (4) LTMCZOF

131. From the given options, find the pair which is similar to the given pair 8 : 4

(1) 27 : 9 (2) 216 : 32 (3) 72 : 24 (4) 45 : 5

132. Arrangement of numbers in the following question follow a common logic. Find out the missing number.

	49	
3	?	4
9	25	16
	36	

(1) 2 (2) 3 (3) 5 (4) 4

133. Complete the pattern.

6, 11, 21, 36, 56, (.....)

(1) 42 (2) 51 (3) 81 (4) 91

134. In the following question, there is a certain relationship between the two given numbers on one side of (: :) and one number is given on another side of (: :) where another number is to be found from the given alternatives, having the same relationship with this number as the numbers of the given pair bear. Choose the best alternative.

100 : 121 : : 144 : ?

(1) 160 (2) 93 (3) 169 (4) 196

135. Which of the following cubes *cannot* be formed using the given cube net ?
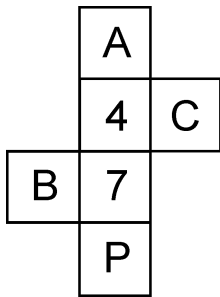
(1)   (2)   (3)   (4)

136. The question given below contains three items. These items may or may not have some relation with one another. The group of items may fit into one of the diagrams (1), (2), (3), (4). Indicate the diagram in which the group of items correctly fits into.

Boys, Class, Girls

(1)   (2)

(3)   (4)

137. Six books P, Q, R, S, T and U are placed side by side. R, Q, T have blue covers and other books have red covers. Only S and P are new books and the rest are old. P, R, S are law reports, the rest are Gazetteers. Which two books are old Gazetteers with blue covers ?

(1) Q and U   (2) T and U   (3) Q and T   (4) Q and R

138. Given pair of figures on the either side of :: has a certain relationship. Identify the relationship between pair of figures and choose the missing figure.

(1)   (2)   (3)   (4)
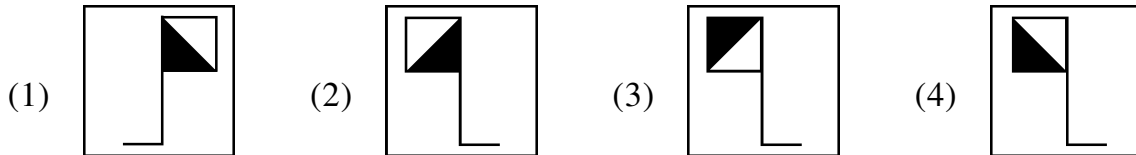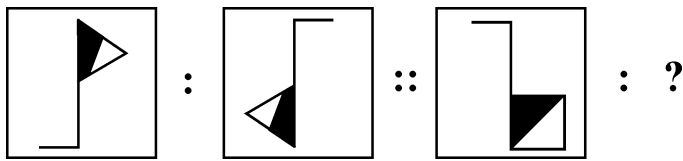
139. A family consists of six members P, Q, R, X, Y and Z. P and R are a married couple. Q is the son of R, but R is not the mother of Q. Y is the brother of R. X is the daughter of P. Z is the brother of P. How many female members are there in the family ?

(1)   1   (2)   2   (3)   4   (4)   3

140. Which one of the following numbers will replace the question mark (?) in the number pattern given below ?
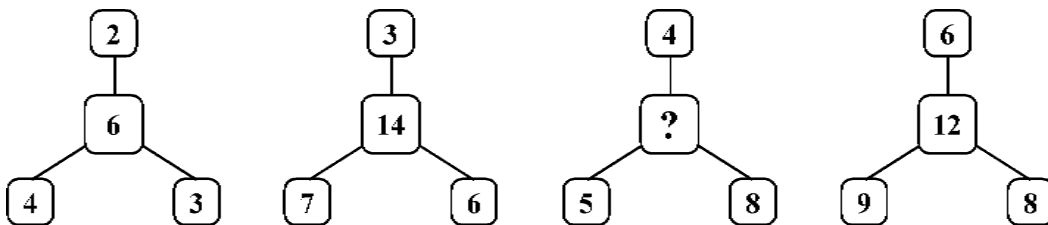
(1)   12   (2)   10   (3)   8   (4)   15

141. If 'PARK' is coded as '5394', 'SHIRT' is coded as '17698' and 'PANDIT' is coded as '532068', then how is 'NISHAR' written in that code ?

(1)   891560   (2)   261739   (3)   268539   (4)   151738

142. In a code language, SUGAR is written as BCDZF and WATER is written as PZQMF. Put the word TEARS into the same code.

(1)   QCMPB   (2)   QZFBD   (3)   QMZFB   (4)   QBDPM

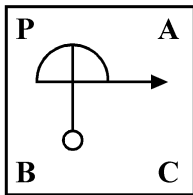**143.** Find the minimum number of line segments used in forming the given figure.
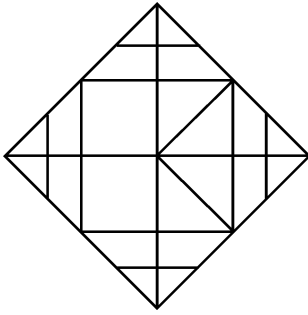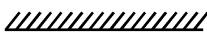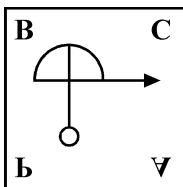

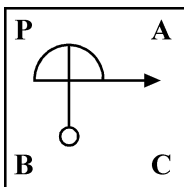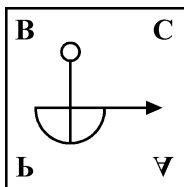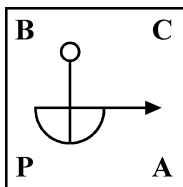(1) 24   (2) 20   (3) 18   (4) 16

144. If $P + R = 2Q$ and $Q + S = 2P$, which of the following is correct ?

(1) $P + Q = R + S$ (2) $P + S = R + Q$ (3) $P + Q = 2R$ (4) $P + Q = 2S$

145. In the following question, choose the correct mirror image from the answer figures.

(1)   (2)   (3)   (4)

**146.** Using the table given below, identify the correct expression.

P	Q	R	S
×	÷	+	−

(1) 2 P 9 S 24 Q 8 R 1 = 32   (2) 2 R 9 S 24 Q 8 P 1 = 8

(3) 2 P 8 S 24 R 9 Q 1 = 4   (4) 2 P 8 S 24 Q 8 S 1 = 16

147. Freya is on the left of the person sitting in middle but is on the right of Bella. Sara is on the right of Jamie and Austin is on the right of Sara. Austin is the second person from the person sitting in the middle. Who is sitting in the middle ?

(1) Freya   (2) Jamie   (3) Bella   (4) Sara

148. Find the missing number in the figure below.

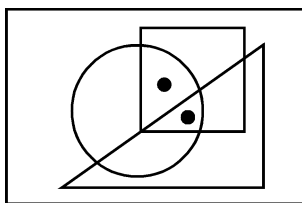| 143 | 3 |
| 99 | 15 |
| ? | 35 |
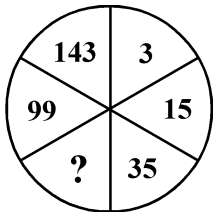
(1) 56   (2) 60   (3) 63   (4) 65

149. A person is standing on a staircase. He walks down 4 steps, up 3 steps, down 6 steps, up 2 steps, up 9 steps and down 2 steps. Where is he standing in relation to the step on which he started ?

(1) 2 steps above   (2) 1 step above   (3) The same place   (4) 1 step below

150. Select the option which satisfies the same conditions of placement of the dots as in the Figure.

(1)   (2)   (3)   (4)

- o 0 o -

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK