

No. of Printed Pages : 16

TR 2445

Register No.

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Time Allowed : 2.30 Hours

Maximum Marks : 100

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you answer the questions.

Answers should be marked in the OMR Answer Sheet using black ball point pen.

1. This booklet consists of 100 questions for four subjects with 25 questions in each subject.
1 - 25 Mathematics
26 - 50 Science
51 - 75 Social Science
76 - 100 Mental Ability Test
2. Each question carries one mark.
3. Since the time allotted to the Question Paper is very limited, you should make the best use of it by not spending too much time on any question.
4. If you do not know the answer to any question, do not spend much time on it and pass on to the next one. If time permits, try the questions which you have left in the first instance.
5. Blank pages are provided for rough work at the end of the Question Booklet.
6. Choose the correct answer from the options given for each question and darken the corresponding circle with black ball point pen in the OMR Answer Sheet.
7. Handover the OMR Answer Sheet only to the invigilator and the candidates are allowed to take the Question Booklet with them.

M A S T E R C O P Y

MATHEMATICS

1. The factors of $x^2 + x - 12$ are :
 - (1) $(x + 4), (x - 3)$
 - (2) $(x - 4), (x - 3)$
 - (3) $(x + 2), (x - 6)$
 - (4) $(x + 3), (x - 4)$

2. In a triangle ABC, $\angle A = 60^\circ$ and $AB = AC$, then the ΔABC is called :
 - (1) a right angled triangle
 - (2) an isosceles triangle
 - (3) an equilateral triangle
 - (4) a scalene triangle

3. In the given figure $x^\circ = 144^\circ$ find $y^\circ = ?$
 - (1) 36°
 - (2) 46°
 - (3) 216°
 - (4) 226°

4. If $(a + b)^2 = 144$ and $(a - b)^2 = 4$ then the value of $(a + b)^2 + (a - b)^2 =$ _____ .
 - (1) 49
 - (2) 148
 - (3) 12
 - (4) 25

5. The points $(-8, -15)$ lies in which quadrant ?
 - (1) I
 - (2) II
 - (3) III
 - (4) IV

6. Simplify : $\frac{1}{5} \div 2\frac{1}{2}$.
 - (1) $\frac{2}{25}$
 - (2) $\frac{1}{2}$
 - (3) $\frac{10}{7}$
 - (4) $\frac{3}{10}$

7. Find the square root of 6.25.
 - (1) 0.025
 - (2) 2.005
 - (3) 2.05
 - (4) 2.5

8. If $2y - 7 = 1$, then the value of y is :
 - (1) 3
 - (2) 4
 - (3) -4
 - (4) -3

9. The product of $(x - 1)(2x - 3)$ is :
 - (1) $2x^2 - 5x - 3$
 - (2) $2x^2 - 5x + 3$
 - (3) $2x^2 + 5x - 3$
 - (4) $2x^2 + 5x + 3$

10. The price of a scooter was ₹ 34,000 last year. It has increased by 25% this year. Then the increase in price is :
 - (1) ₹ 6,500
 - (2) ₹ 8,500
 - (3) ₹ 8,000
 - (4) ₹ 7,000

11. An almirah was sold at ₹ 5,225 after allowing a discount of 5%. Find its market price.
 - (1) ₹ 5,050
 - (2) ₹ 5,000
 - (3) ₹ 5,500
 - (4) ₹ 5,725

12. Find the perimeter of the quadrant of a circle of diameter 84 cm whose in between angle is 90° .
 - (1) 150 cm
 - (2) 120 cm
 - (3) 21 cm
 - (4) 42 cm

13. Subtract $2(p - q)$ from $3(5p - q + 3)$:
 (1) $17p - q - 9$ (2) $13p - q + 9$
 (3) $17p - 5q + 9$ (4) $13p + q - 9$
14. Find the average of 3, 6, 9, 12, 15.
 (1) 6 (2) 7
 (3) 8 (4) 9
15. The multiplicative inverse of -7 is :
 (1) 7 (2) $\frac{1}{7}$
 (3) -7 (4) $-\frac{1}{7}$
16. The square root of 169 is :
 (1) 13 (2) 15
 (3) 17 (4) 19
17. The coefficient of x^4 in $-5x^7 + \frac{3}{7}x^4 - 3x^3 + 7x^2 - 1$ is _____.
 (1) -5 (2) -3
 (3) $\frac{3}{7}$ (4) 7
18. If $6x = 72$ then the value of x is :
 (1) 13 (2) 12
 (3) 11 (4) 14
19. Area of a semicircle is :
 (1) πr^2 sq. units
 (2) $(\pi r)^2$ sq. units
 (3) $\frac{\pi r^2}{2}$ sq. units
 (4) $\frac{\pi r^2}{4}$ sq. units
20. The longest chord of a circle is :
 (1) radius (2) arc
 (3) diameter (4) tangent
21. 1, 1, 2, 3, 5, 8, ?
 (1) 21 (2) 15
 (3) 13 (4) 27
22. $-42y^3 \div 7y^2 = ?$
 (1) $-6y^2$ (2) $-6y$
 (3) $-6y^3$ (4) $-\frac{1}{6}y$
23. If $12^x = 144$ then $x = ?$
 (1) 3 (2) 2
 (3) 4 (4) 6
24. The median of 17, 15, 9, 13, 21, 7, 32 is :
 (1) 7 (2) 32
 (3) 15 (4) 13
25. Which of the following sets of measurements will form a triangle ?
 (1) 12 cm, 10 cm, 25 cm
 (2) 9 cm, 7 cm, 16 cm
 (3) 23 cm, 17 cm, 8 cm
 (4) 5 cm, 3 cm, 9 cm

SCIENCE

26. Match the following :

- | | |
|----------------------|----------------|
| (a) Solid angle | (i) Ampere |
| (b) Pressure | (ii) Steradian |
| (c) Plane angle | (iii) Pascal |
| (d) Electric current | (iv) Radian |

- (1) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
 (2) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)
 (3) (a)-(iv), (b)-(iii), (c)-(ii), (d)-(i)
 (4) (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)

27. If a liquid gives force of 200 N with a pressure of 50 Nm^{-2} , then find the area in which it acts.

- (1) 4 m^2 (2) 2 m^2
 (3) 10 m^2 (4) 5 m^2

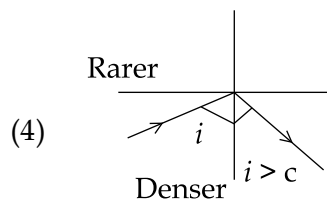
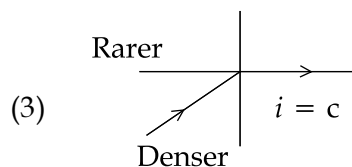
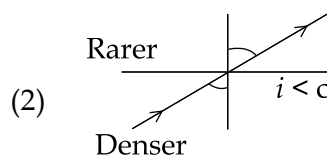
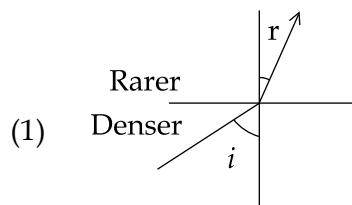
28. The astronauts wear a special dress to go into space because :

- (1) there is no air in the atmosphere and so to avoid high pressure in our body
 (2) to withstand the cold condition in atmosphere.
 (3) to withstand the gravitational pull in the atmosphere.
 (4) to avoid pollution in atmosphere.

29. The two upper ends of the tuning fork is called _____.

- (1) Prongs (2) Stem
 (3) String (4) Scale

30. Find the picture which explains, the light will be deviated away from the normal when it passes from a denser to rarer medium :



31. The principle used in Kaleidoscope is :

- (1) Regular reflection
 (2) Irregular reflection
 (3) Multiple reflection
 (4) Total internal reflection

32. Find the odd man out.

- (1) depth (2) thickness
 (3) diameter (4) pressure

33. Angle of incidence is equal to Angle of reflection is :
- (1) Law of reflection
 - (2) Total internal reflection
 - (3) Refraction
 - (4) Dispersion
34. Choose the **incorrect** statement.
A pure substance
- (1) can be recognized by its density, melting point, refractive index.
 - (2) is an element or a compound.
 - (3) has a fixed composition.
 - (4) can be easily separated by physical methods.
35. Match the following :
- | Element | Symbol |
|--------------|----------|
| (a) Antimony | (i) W |
| (b) Tungston | (ii) Au |
| (c) Lead | (iii) Sb |
| (d) Gold | (iv) Pb |
- (1) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
 - (2) (a)-(iv), (b)-(i), (c)-(iii), (d)-(ii)
 - (3) (a)-(iii), (b)-(i), (c)-(ii), (d)-(iv)
 - (4) (a)-(iii), (b)-(i), (c)-(iv), (d)-(ii)
36. Find the **incorrect** pair.
- (1) Bitumen - Paint
 - (2) Liquid Ammonia - Fertilizer
 - (3) Petroleum - Black gold
 - (4) Paraffin - Motor fuel
37. "Mass is neither created nor destroyed during physical or chemical change" is _____.
- (1) Law of Multiple Proportions
 - (2) Law of Combining Volume
 - (3) Law of Conservation of Mass
 - (4) Law of Definite Proportions
38. Barium Chloride + Sodium Sulphate → ?
- (1) Barium Sulphite + Sodium Chloride
 - (2) Barium Sulphate + Sodium Chloride
 - (3) Barium Sulphide + Sodium Chloride
 - (4) Barium Sulphate + Sodium Chlorate
39. Intermolecular space is minimum in :
- (1) solid
 - (2) liquid
 - (3) gas
 - (4) colloid
40. The acidic property due to ant bite can be neutralized by :
- (1) Calamine Solution
 - (2) Milk of Magnesia
 - (3) Calcium Oxide
 - (4) Magnesium Hydroxide

41. The chemical name of Baking Soda :
- (1) Calcium Oxy chloride
 - (2) Calcium Carbonate
 - (3) Sodium Bi Carbonate
 - (4) Sodium Chloride
42. Find the odd man out.
- (1) Grass
 - (2) Chenopodium
 - (3) Amaranthus
 - (4) Eucalyptus
43. "Adam's Apple" refers to :
- (1) Larynx in boys
 - (2) Best apple variety in Kashmir
 - (3) Ductless gland
 - (4) Eyes of a baby
44. According to WHO, adolescence is the period between :
- (1) 11 and 19 years of age
 - (2) 3 and 10 years of age
 - (3) upto 2 years
 - (4) 20 and 32 years of age
45. The alpha and beta cells in Islets of langerhans secretes :
- (1) Insulin and Trypsin
 - (2) Fructose and Disaccharide
 - (3) Glucose and Fructose
 - (4) Glucagon and Insulin
46. Muscles are attached to bones by _____.
- (1) tendons
 - (2) tendrils
 - (3) synovial fluid
 - (4) periosteum
47. The smallest and largest bones in the human body are :
- (1) Finger bone and Femur
 - (2) Stapes and Femur
 - (3) Finger bone and Stapes
 - (4) Nasal bone and vertebral column
48. Find the odd man out.
- (1) Flagella
 - (2) Setae
 - (3) Wings
 - (4) Skin
49. Pick the incorrect pair :
- (1) Araucaria - Ornamental plant
 - (2) Ephedra - Cures rheumatism
 - (3) Pinus - Timber
 - (4) Agathis - Paper
50. Holes caused in the ozone layer occurs in :
- (1) Stratosphere
 - (2) Troposphere
 - (3) Mesosphere
 - (4) Exosphere

SOCIAL SCIENCE

51. The last king of Delhi Sultan was :

- (1) Daulat Khan Lodi
- (2) Ibrahim Lodi
- (3) Alam Khan
- (4) Chengizkhan

52. Who assumed the title "Alamgir" ?

- (1) Shah Jahan
- (2) Aurangazeb
- (3) Babur
- (4) Jahangir

53. Fort St. George and Fort William are in _____ and _____ respectively.

- (1) Madras, Calcutta
- (2) Madras, Bombay
- (3) Bombay, Calcutta
- (4) Mahe, Puducherry

54. Match the following :

People	Trade Centre
(a) The Danish	(i) Agra and Broach
(b) The Dutch	(ii) Tranquebar and Serampore
(c) The British	(iii) Surat and Masulipatnam
(d) The French	(iv) Cambay and Ahmedabad

(1) (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)

(2) (a)-(ii), (b)-(iv), (c)-(i), (d)-(iii)

(3) (a)-(i), (b)-(iii), (c)-(iv), (d)-(ii)

(4) (a)-(iv), (b)-(i), (c)-(ii), (d)-(iii)

55. The Supreme Court was established in India in the year :

- (1) 1772
- (2) 1773
- (3) 1774
- (4) 1784

56. First postal stamps were introduced by :

- (1) Lord Wellesly
- (2) Lord William Bentinck
- (3) Lord Cornwallis
- (4) Lord Dalhousie

57. Arrange the following events in the chronological order :

- (a) Sir Charles Wood's Despatch
- (b) Queen Victoria's Proclamation
- (c) Sepoy Mutiny
- (d) Vellore Mutiny

- (1) (d)-(a)-(c)-(b)
- (2) (d)-(a)-(b)-(c)
- (3) (b)-(c)-(d)-(a)
- (4) (b)-(c)-(a)-(d)

58. "Uyyakondan Canal" was the contribution of :

- (1) Vishwanatha Nayak
- (2) Meenakshi
- (3) Queen Mangammal
- (4) Thirumalai Nayak

59. Which is called "Fossil Fuel" ?

- (1) Iron (2) Thorium
- (3) Coal (4) Uranium

60. Largest producer of solar energy in the world is :

- (1) Germany (2) France
- (3) India (4) Japan

61. Find the correct pair.

- (1) Rabari - India
- (2) Bedouin - Scandinavia
- (3) Kurds - Tanzania
- (4) Lapps - West Asia

62. In India, shifting agriculture is called as :

- (1) Milpa (2) Roco
- (3) Poda (4) Chena

63. Which among the following is a non-metallic mineral ?

- (a) Magnetite
- (b) Sulphur
- (c) Salt
- (d) Bauxite

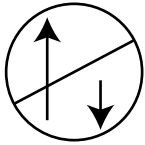
- (1) (a) and (b) (2) (b) and (c)
- (3) (c) and (d) (4) (a) and (d)

64. Ore of tin is _____.
- (1) Bauxite (2) Siderite
(3) Cassiterite (4) Limonite
65. Match the following :
- (a) BHEL (i) Jamshedpur
(b) ICF (ii) Salem
(c) SAIL (iii) Trichy
(d) TISCO (iv) Chennai
- (1) (a)-(ii), (b)-(iii), (c)-(i), (d)-(iv)
(2) (a)-(iv), (b)-(i), (c)-(ii), (d)-(iii)
(3) (a)-(ii), (b)-(iv), (c)-(iii), (d)-(i)
(4) (a)-(iii), (b)-(iv), (c)-(ii), (d)-(i)
66. The difference in values between imports and exports is :
- (1) Exchange delivery settlement
(2) Balance of trade
(3) Inflation
(4) Margin trading
67. On Linguistic basis the Indian states were divided in the year _____.
- (1) 1965 (2) 1959
(3) 1961 (4) 1956
68. The Prime Minister who was responsible for the abolition of bonded labour in 1976 :
- (1) Mr. Morarji Desai
(2) Mr. Charan Singh
(3) Mrs. Indira Gandhi
(4) Mr. Rajiv Gandhi
69. Choose the **incorrect** pair :
- (1) World Literacy Day - September 8
(2) Human Rights Day - December 7
(3) U.N.O. Day - October 24
(4) World Population Day - July 11

70. Choose the **correct** pair.

- (1) International Year of Women - 1990
- (2) International Literacy Year - 1993
- (3) Human Rights Commission - 1978
- (4) The International Year of - 1979 Children

71.



What does this symbol denotes ?

- (1) One way
- (2) Do not overtake
- (3) Zebra crossing
- (4) Go slow

72. Labourers below the age of _____ are called child labourers.

- (1) 14 years (2) 15 years
- (3) 16 years (4) 18 years

73. POCSO Act deals with :

- (1) Protection of children against bonded labour
- (2) Protection of women against dowry harassment
- (3) Protection of children against sexual offence
- (4) Protection of women against poverty

74. Emergency call number 101 denotes :

- (1) Police
- (2) Fire
- (3) Medical
- (4) Road Safety

75. Pick out the **correct** statement.

The main functions of money are

- (a) Store of value
- (b) Medium of exchange
- (c) Measure of value
- (d) Hidden as treasure

- (1) (a), (b) and (c) only
- (2) (b), (c) and (d) only
- (3) (a), (c) and (d) only
- (4) (a), (b) and (d) only

MENTAL ABILITY TEST

In each of the questions 76 to 80 there are four items. Three of them have something in common, while the fourth is different. Find out the different item and shade its number in the OMR answer sheet.

In each of the questions 81 to 85 a series as per a rule is given with one term missing pick the missing item from among the four alternatives given and shade its number in the OMR answer sheet.

76. (1) Physics (2) Chemistry
(3) History (4) Biology

81. 35, 30, 26, 23, ___?___.
(1) 22 (2) 21
(3) 20 (4) 19

77. (1) Cricket (2) Football
(3) Hockey (4) Chess

82. 8, 10, 13, 17, ___?___.
(1) 20 (2) 21
(3) 22 (4) 23

78. (1) Silappathikaram
(2) Manimekalai
(3) Mahabaratham
(4) Sivagasinthamani

83. 25, 16, 9, 4, ___?___.
(1) 1 (2) 2
(3) 3 (4) 0

79. (1) Brinjal (2) Potato
(3) Ladies finger (4) Chilly

84. 216, 125, 64, 27, ___?___.
(1) 2 (2) 15
(3) 8 (4) 16

80. (1) Thiruvannamalai
(2) Kolli hills
(3) Anaimalai hills
(4) Servarayan hills

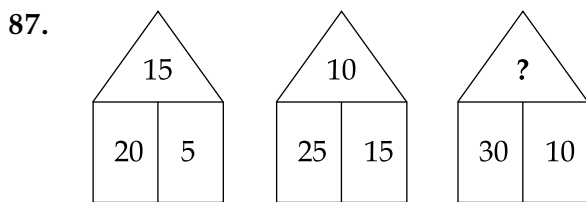
85. A, C, F, J, O, ___?___.
(1) V (2) U
(3) T (4) W

Questions 86 to 90 has a blank space. Four options are given below. Identify the correct response and shade the appropriate number in the OMR answer sheet.

86.

?	8
14	5

- (1) 11 (2) 10
 (3) 12 (4) 16



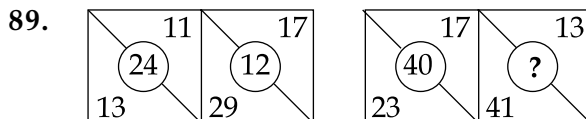
- (1) 20 (2) 25
 (3) 15 (4) 10

88.

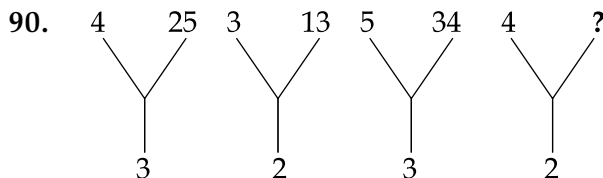
1	4
9	25

36	49
64	?

- (1) 121 (2) 81
 (3) 100 (4) 144



- (1) 54 (2) 28
 (3) 46 (4) 57



- (1) 6 (2) 12
 (3) 35 (4) 20

Find the pattern and shade the appropriate number in the OMR answer sheet.

91. GOLD can be written as HOME, COME can be written as DONE then SONS can be written as :

- (1) TTOT (2) TOOT
 (3) TOOS (4) TONT

92. ABCD can be written as 1 2 3 4; and EFGH can be written as 5 6 7 8 then CDEF can be written as :

- (1) 23 45 (2) 34 56
 (3) 45 67 (4) 56 78

93. A=5, B=10, C=15 then A+B+AB+BC = ?

- (1) 215 (2) 200
 (3) 30 (4) 155

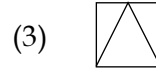
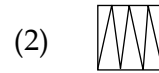
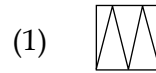
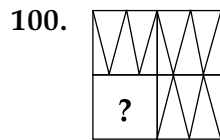
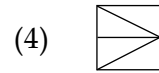
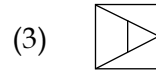
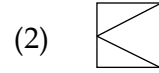
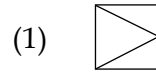
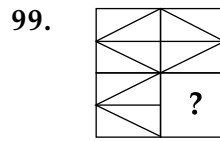
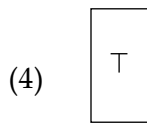
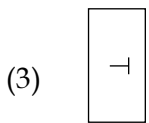
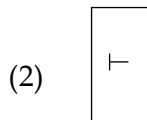
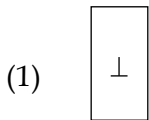
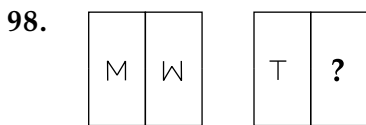
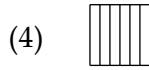
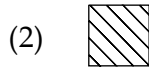
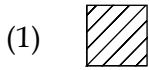
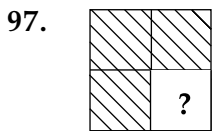
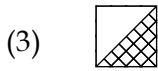
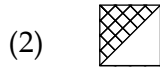
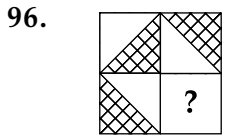
94. 'ANSWER' can be written as ASR then 'PARDON' can be written as :

- (1) AER (2) PRN
 (3) TEN (4) ARN

95. 10+11+12, 9+10+14, 11+?+11

- (1) 9 (2) 10
 (3) 11 (4) 12

Find the next diagram from the given diagram.



- o O o -

M A S T E R C O P Y

FOR ROUGH USE (Not for evaluation)

M A S T E R C O P Y

FOR ROUGH USE (Not for evaluation)