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Father of Indian nuclear programme  
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## MSAT ( Mathematics & Science Ability Test )

8 Std.      50 Questions      45 Minutes      200 Marks      Negative Marking (+4, -1)

- The area of a right angled triangle whose base is 12 cm and hypotenuse 13 cm  
A)  $20 \text{ cm}^2$       B)  $30 \text{ cm}^2$       C)  $35 \text{ cm}^2$       D)  $45 \text{ cm}^2$
- The base of a parallelogram is twice its height .if the area of the parallelogram is 72 sq.cm, find its height  
A) 5cm      B) 6cm      C) 4cm      D) 8cm
- The difference between the circumference and the radius of a circle is 37cm The area of the circle is  
A)  $111 \text{ cm}^2$       B)  $148 \text{ cm}^2$       C)  $154 \text{ cm}^2$       D)  $259 \text{ cm}^2$
- If the ratio of areas of two circles is 4:9 ,then the ratio of their circumference  
A) 2:3      B) 3:2      C) 4:9      D) 9:4
- The three sides of a triangle are 5cm,12cm and 13cm respectively. then ,its area is  
A)  $10\sqrt{3} \text{ CM}^2$       B)  $10\sqrt{6} \text{ CM}^2$       C)  $20 \text{ CM}^2$       D)  $30 \text{ CM}^2$
- If an angle of a parallelogram is two third of its adjacent angle, the smallest angle of the parallelogram is  
A)  $54^\circ$       B)  $72^\circ$       C)  $81^\circ$       D)  $108^\circ$
- The sum of  $-\frac{1}{8}$  and  $-\frac{1}{8}$  is  
A)  $1/4$       B)  $-1/4$       C) 0      D) 1
- The value of  $\left(\frac{75983 \times 75983 - 45983 \times 45983}{30000}\right)$   
A) 121936      B) 121866      C) 121966      D) 121456
- A quadrilateral ,in which only one pair of opposite sides is parallel is a .....  
A) Rectangle      B) Kite      C) Trapezium      D) Rhombus
- If  $x:y=3:4$ ,then  $(4x+5y):(5x-2y)$   
A)  $25/7$       B) 25      C)  $32/7$       D) 32

11. If  $\frac{1}{8}$  of a pencil is black,  $\frac{1}{2}$  of the remaining is white and the remaining  $3\frac{1}{2}$  cm is blue, find the total length of the pencil.

- A) 5 cm                      B) 9 cm                      C) 6 cm                      D) 8 cm

12. The value of  $\sqrt{10 + \sqrt{25 + \sqrt{108 + \sqrt{154 + \sqrt{225}}}}}$  is

- A) 4                      B) 6                      C) 8                      D) 10

13. 100% of 28 is -

- A) 2800                      B) 280                      C) 2.8                      D) 28

14. What should be added to  $(\frac{3}{4} + \frac{2}{5})$  to get  $\frac{+8}{15}$

- A)  $)-101/60$                       B)  $101/60$                       C)  $21/60$                       D)  $-21/60$

15. The value of  $\frac{(6+6+6+6)\div 6}{4+4+4+4\div 4}$  is equal to

- A) 1                      B)  $3/2$                       C)  $4/13$                       D)  $6/13$

16. The substance that can be combustible used as

- A) Solvent                      B) Fuel                      C) Oil                      D) Lubricant

17. Which of the following are combustible substances?

- A) Wood                      B) Mg                      C) Charcoal                      D) All

18. Exothermic reaction in which heat is --

- A) Absorbed                      B) Release                      C) Absorbed & Release                      D) No Change

19. Inflammable substance from followings

- A) Petrol                      B) Alcohol                      C) LPG                      D) All

20. Which of the following is not an element?

- A) Diamond                      B) Silica                      C) Lawrencium                      D) Graphite

21. Which metal is in liquid state

- A) Na                      B) Mg                      C) Au                      D) Hydrogyrum

22. 7. Which non-metal is in liquid state

- A) I                      B) Br                      C) N                      D) P

23. The valency of carbon is

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

**24. Which of the following are metals**

- A) Na & N                      B) Mg & Na                      C) C & Au                      D) H & Li

**25. 10. Which of the following are non- metals**

- A) C & Li                      B) Br & Na                      C) N & O                      D) P & Mg

**26. 11. The atomic number of carbon is**

- A) 2                      B) 6                      C) 3                      D) 1

**27. Base + Acid → Salt + Water**

- A) Oxidation                      B) Combination                      C) Combustion                      D) Neutralization

**28. 13. Metals are**

- A) Ductile                      B) Malleable                      C) Sonorous                      D) All

**29. Generally ----- are good conductor of electricity**

- A) Wood                      B) Non metals                      C) Metals                      D) None

**30. Oxides of non-metals are**

- A) Acidic                      B) Basic                      C) Amphoteric                      D) All

**31. If a wire is cut into 5 pieces each great then previous by 1 cm. Then find total length if the smallest piece is of 2cm?**

- A) 20 cm                      B) 22 cm                      C) 18 cm                      D) None

**32. If the wire is extended by 8cm and then compressed by 4 cm. The ratio of initial change to find change is 4. Find the basic length of wire?**

- A) 2 cm                      B) 4 cm                      C) 6 cm                      D) 8 cm

**33. If the age of smallest child of family is  $\frac{1}{4}$  of his father and  $\frac{1}{3}$  of his mother if the total age of house is 120 Yr. Find the age of Mother?**

- A) 15 Years                      B) 60 Years                      C) 45 Years                      D) 35 Years

**34. If an amount is kept in bank and increases by 10% of initial amount every year. After 6 years if the initial amount is added to the final amount from bank. The total is 2,60,000/- Find the Principle amount**

- A) 1,00,000                      B) 1,60,000                      C) 1,50,000                      D) 2,00,000

**35. If there are 10 observation (Scores) of a Batsman and they are 4, 5, 6, 7, 8, 9, 11, 12, 13 then its mean is \_\_\_\_\_.**

- A) 7.5                      B) 8.5                      C) 9.5                      D) 10

**36. What is the frequency of Male & Girls?**

- A) 20 Male, 15 Girls                      B) 30 Male, 20 Girls                      C) 25 Male, 15 Girls                      D) 40 Male, 15 Girls

37. What is the highest frequency and of whom?

- A) 25 Male                      B) 35 Male                      C) 20 Woman                      D) 25 Woman

38. If an apple is cut into 3 pieces and each piece is twice the previous then what is the size of 1st place?

- A) Nearly 10% of original apple      B) Nearly 14% of original apple      C) Nearly 20% of original apple      D) Nearly 25% of original apple

39. What is square of -172 and (-11) =?

- A) -289, -121                      B) 289, 121                      C) -289, 121                      D) 289, -121

40. What is that pulls me down to earth?

- A) Air                      B) Gravitation Acceleration                      C) Electrostatic Acceleration                      D) Mechanical Force

41. Magnet has Magnetic lines within the magnet from \_\_\_\_\_ to \_\_\_\_\_ ?

- A) North to South                      B) South to North                      C) North to North                      D) South to South

42. Light has \_\_\_\_\_ nature?

- A) Particle                      B) Wave                      C) Dual                      D) None of these

43. Light shows bouncing back effect called as\_\_\_\_\_.

- A) Reflection                      B) Refraction                      C) Diffraction                      D) None

44. Archimedes Principal informs us about

- A) Apparent Mass                      B) Apparent Weight                      C) Both                      D) None

45. If area of contact increase keeping force constant?

- A) Pressure will increase                      B) Pressure will decrease                      C) Pressure constant                      D) None

46. Female Anopheles mosquito spreads which disease ?

- A) Pneumonia                      B) Covid                      C) Malaria                      D) None of the above

47. Our atmosphere has ..... nitrogen gas.?

- A) 21%                      B) 78%                      C) 71%                      D) 68%

48. The crops grown in the winter season (October to March) are called

- A) Sowing                      B) Threshing                      C) Kharif                      D) rabi crops.

49. .... is the source book which keeps a record of all the endangered animals and plants.

- A) Yellow Data Book                      B) Blue Data Book                      C) Red Data Book                      D) Black Data Book

50. All organisms other than bacteria and blue green algae are called

- A) eukaryotes.                      B) Prokaryotes                      C) both a & b                      D) None of the above.