

34/2014

Maximum : 100 marks

Time : 1 hour and 15 minutes

1.  $0.01 \times 0.01 =$   
(A) 0.001 (B) 0.0001  
(C) 0.1 (D) 0.0101
2.  $32^\circ\text{F} =$   
(A)  $32^\circ\text{C}$  (B)  $100^\circ\text{C}$   
(C)  $-32^\circ\text{C}$  (D)  $0^\circ\text{C}$
3.  $0.5 \text{ kg} =$   
(A) 5 grams (B) 50 grams  
(C) 500 grams (D) 5000 grams
4. When measurements are required in three units \_\_\_\_\_ scale is used.  
(A) diagonal (B) plain  
(C) comparative (D) none of these
5. 735.5 watts =  
(A) 550 kg metre/second (B) 750 kg metre/second  
(C) 75 kg metre/second (D) 7.5 kg metre/second
6.  $200 \text{ cm} =$   
(A) 0.2 metre (B) 0.02 metre  
(C) 0.002 metre (D) 2 metre
7. Unit for stress in S.I. system is :  
(A)  $\text{kg}/\text{cm}^2$  (B)  $\text{gm}/\text{mm}^2$   
(C)  $\text{Newton}/\text{m}^2$  (D)  $\text{Newton}/\text{cm}^2$
8. 1 kWh is equal to :  
(A) 4.2 mega joules (B) 33000 joules  
(C) 0.42 kilo joules (D) 3.6 mega joules

9. T-square is used for drawing \_\_\_\_\_ lines.
- (A) vertical (B) curved  
(C) horizontal (D) oblique
10. 25.4 cm is equal to :
- (A) 10 inches (B) 0.01 inch  
(C) 1 inch (D) 2.54 inches
11. 1 ton =
- (A) 100 kg (B) 1016 kg  
(C) 1000 kg (D) 980 kg
12. L.C.M. of 3,4 and 5 is :
- (A) 3 (B) 4  
(C) 5 (D) 60
13. The angle which is more than  $180^\circ$  and less than  $360^\circ$  is called :
- (A) Reflex angle (B) Acute angle  
(C) Straight angle (D) Obtuse angle
14. 1 kilometre is equal to :
- (A) 0.622 mile (B) 0.633 mile  
(C) 0.602 mile (D) 0.666 mile
15. \_\_\_\_\_ is used for setting-off short equal distance.
- (A) Compass (B) Bow divider  
(C) Scale (D) None of these
16.  $2\frac{1}{2} \times 3\frac{1}{2}$  is equal to :
- (A) 0.5 (B) 7.75  
(C) 8.75 (D) 35
17. Which formula is used to calculate the diagonal of a rectangle when 'l' and 'b' are the length and breadth of the rectangle?
- (A)  $d = \sqrt{l^2 + b^2}$  (B)  $\sqrt{l^2 - b^2}$   
(C)  $d = \sqrt{lb}$  (D)  $\sqrt{l^2 \cdot b^2}$



18. To remove unnecessary lines \_\_\_\_\_ is used.
- (A) duster (B) chalk  
(C) sand paper (D) eraser
19. As far as possible dimensions should be given in one unit, preferably in :
- (A) centimetres (B) metres  
(C) inches (D) millimetres
20. 1 gallon equals to :
- (A) 4.1 litres (B) 4.24 litres  
(C) 4.50 litres (D) 4.54 litres
21. State which of the following are in proportion :
- (A)  $6 : 8 :: 5 : 15$  (B)  $3 : 7.5 :: 2 : 7$   
(C)  $10 : 21 :: 4 : 8.4$  (D)  $7 : 10 :: 14 : 18$
22. In which quadrant the units 3, -7 will be plotted?
- (A) I quadrant (B) II quadrant  
(C) III quadrant (D) IV quadrant
23. The value of  $\sin^2 30 + \cos^2 30$  equals to :
- (A) 0 (B) 1  
(C) 0.5 (D) 1800
24. Which one is the improper fraction?
- (A)  $\frac{2}{3}$  (B)  $\frac{9}{5}$   
(C)  $\frac{2/3}{4}$  (D)  $5\frac{5}{6}$
25. Which one refers to temperature?
- (A) It is a form of energy (B) It tells the state of heat  
(C) Unit is calorie (D) It is measured by calorimeter
26. The value of  $4^{\frac{3}{2}}$  is :
- (A) 2 (B) 6  
(C) 8 (D) 4096

27. Drawings of buildings are drawn using :

- (A) full-size scale (B) reduced scale  
(C) scale of chords (D) enlarged scale

28. If  $\cos \theta = \frac{4}{5}$ ,  $\sin \theta =$

- (A)  $\frac{3}{5}$  (B)  $\frac{4}{5}$   
(C)  $\frac{5}{4}$  (D)  $\sqrt{3}$

29. The H.C.F. of 66 and 330 is :

- (A) 66 (B) 330  
(C) 24 (D) 3

30. Lateral surface area of a cone is :

- (A)  $\pi r l$  (B)  $\frac{1}{3} \pi r l$   
(C)  $\frac{1}{4} \pi r^2 h$  (D)  $\frac{1}{3} \pi r^2 h$

31.  $\text{Log} \left( \frac{a}{b} \right) =$

- (A)  $\text{Log } a + \text{Log } b$  (B)  $\text{Log } a - \text{Log } b$   
(C)  $\text{Log } (a+b)$  (D)  $\text{Log } ab$

32. The bigger fraction is :

- (A)  $\frac{5}{6}$  (B)  $\frac{5}{12}$   
(C)  $\frac{5}{7}$  (D)  $\frac{5}{18}$

33. What is the volume 'V' (in  $\text{cm}^3$ ) of the container which can hold 6.28 litres of water at  $4^\circ\text{C}$ ?

- (A)  $V = 6.28 \text{ cm}^3$  (B)  $V = 62.8 \text{ cm}^3$   
(C)  $V = 628 \text{ cm}^3$  (D)  $V = 6280 \text{ cm}^3$



34. The value of  $\tan 45^\circ + \cot 45^\circ =$

(A)  $\sqrt{3}$

(B)  $\frac{1}{2}$

(C) 2

(D)  $2\sqrt{2}$

35. Kinetic energy K.E. =

(A)  $mV^2$

(B)  $\frac{1}{2}mV^2$

(C)  $mV$

(D)  $mgh$

36. Decimal of 62% is :

(A) 0.31

(B) 1.62

(C) 0.62

(D) 2.62

37. A body travels a distance of 20 metres in 10 seconds. What is its speed?

(A) 1 metre/second

(B) 2 metres/second

(C) 3 metres/second

(D) 200 metres/second

38. Perimeter of the rectangle with length ' $l$ ' and breadth ' $b$ ' is :

(A)  $3(l+b)$

(B)  $4(l+b)$

(C)  $2(l+b)$

(D)  $2lb$

39. The sum of interior angles of a pentagon is :

(A)  $500^\circ$

(B)  $600^\circ$

(C)  $540^\circ$

(D)  $450^\circ$

40. Which number is exactly divisible by 3?

(A) 10

(B) 22

(C) 95

(D) 72

41. The value of  $6 \div 3 + 2$  is :

(A) 1

(B) 2

(C) 3

(D) 4

42. The unit of work is :

(A)  $\text{kg/cm}^2$

(B) Newton

(C)  $\text{kg/cm}$

(D)  $\text{kg-cm}$

43. Pythagoras theorem applies to :

- (A) Square (B) Right angled triangle  
(C) Equilateral triangle (D) Isosceles triangle.

44. According to Newton :

- (A) Force = Mass  $\times$  Acceleration (B) Force = Mass  $\times$  Velocity  
(C) Force = Velocity  $\times$  Time (D) Force = Mass  $\times$  Speed

45. If a number is multiple of 2 is called :

- (A) Odd number (B) Mixed number  
(C) Even number (D) Prime number

46. Density has relation between :

- (A) mass and volume (B) volume and temperature  
(C) temperature and pressure (D) mass and velocity

47. Proper fraction is :

- (A) less than 1 (B) equal to 1  
(C) more than 1 (D) zero

48. The formula used for solving quadratic equation is :

- (A)  $x = \frac{b \pm \sqrt{b^2 - 4ac}}{2a}$  (B)  $x = -b \pm \sqrt{\frac{b^2 - 4ac}{2a}}$   
(C)  $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$  (D)  $x = -b \pm \frac{\sqrt{b^2 - 4ac}}{2a}$

49.  $\frac{\text{Force}}{\text{Area}} =$

- (A) Elasticity (B) Load  
(C) Stress (D) Strain

50. In a motor, electric energy is transformed into :

- (A) Light energy (B) Sound energy  
(C) Vibrational energy (D) Mechanical energy



51. Centigrade and Fahrenheit scale reading remains same at \_\_\_\_\_ temperature.

- (A)  $+40^\circ$  (B)  $0^\circ$   
(C)  $+32^\circ$  (D)  $-40^\circ$

52. The factor of safety for any design work should be :

- (A) more than 1 (B) equal to 1  
(C) less than 1 (D) zero

53. In a plane, the maximum angle around a point is :

- (A)  $\pi$  radian (B)  $2\pi$  radian  
(C)  $3\pi$  radian (D)  $\frac{\pi}{2}$  radian

54. Electrical power is measured in :

- (A) Kilowatt hour (B) Watt  
(C) Newton (D) Newton-metre

55. In first angle projection method, the plan drawn at :

- (A) above the elevation (B) right side of elevation  
(C) below the elevation (D) left side of elevation

56. The rate of change of velocity is :

- (A) Momentum (B) Speed  
(C) Acceleration (D) Inertia

57. Which is the odd one of the following?

- (A) Vernier scale (B) Scale of chords  
(C) Plain scale (D) Diagonal scale

58.  $\frac{1}{2} + \frac{1}{2} - \frac{1}{2} \times \frac{1}{2} =$

- (A) 0 (B)  $\frac{1}{2}$   
(C) 1 (D)  $\frac{3}{4}$

59. Density is :

(A)  $\frac{\text{Mass}}{\text{Volume}}$

(C)  $\frac{\text{Weight}}{\text{Volume}}$

(B)  $\frac{\text{Volume}}{\text{Mass}}$

(D)  $\text{Mass} \times \text{Volume}$

60.  $(a+b)(a+b) =$

(A)  $a^2 - b^2$

(C)  $a^2 - 2ab + b^2$

(B)  $a^2 + b^2 + 2ab$

(D)  $a^2 + 2ab - b^2$

61.  $2^{0-2} =$

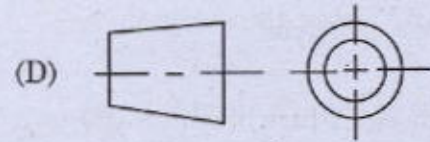
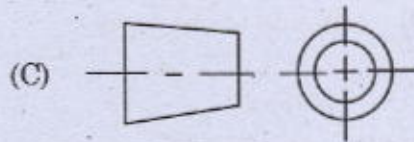
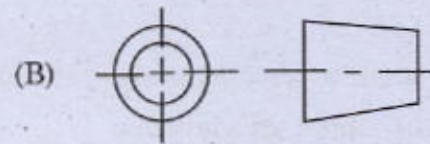
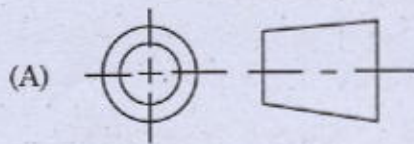
(A) 1

(C)  $\frac{1}{2}$

(B) 4

(D)  $\frac{1}{4}$

62. The symbol for Third Angle projection is :



63. The product of two even numbers will be an \_\_\_\_\_ number.

(A) Odd number

(C) Prime number

(B) Even number

(D) Proper fraction

64. Stress is the ratio of :

(A)  $\frac{\text{Load}}{\text{Area}}$

(C)  $\frac{\text{Load}}{\text{Original Length}}$

(B)  $\frac{\text{Area}}{\text{Load}}$

(D)  $\frac{\text{Increase in Length}}{\text{Original Length}}$

65. Which one of the following is a vector quantity?

(A) Speed

(C) Force

(B) Mass

(D) Specific gravity



66.  $\sqrt{\frac{16}{4}} =$
- (A) 8 (B) 2  
(C) 4 (D) 1
67. The density of iron is 7.85 times the density of water at 4°C. Then the specific gravity of iron is :
- (A) 7.85 (B) 7.85 gm/cm<sup>3</sup>  
(C) 981 (D) 981 gm/cm<sup>3</sup>
68.  $(100 - 1)(100 + 1) =$
- (A) 10099 (B) 9999  
(C) 9901 (D) 9900
69. The isometric drawing of a circle is :
- (A) Circle itself (B) Hyperbola  
(C) Parabola (D) Ellipse
70. The surface area of a sphere is  $36\pi \text{ cm}^2$ , then the volume of the sphere is :
- (A)  $12\pi \text{ cm}^3$  (B)  $18\pi \text{ cm}^3$   
(C)  $72\pi \text{ cm}^3$  (D)  $36\pi \text{ cm}^3$
71. The mass of 1 litre of water at 4°C is :
- (A) 10 gram (B) 100 gram  
(C) 1000 gram (D) 500 gram
72. \_\_\_\_\_ is the most malleable of all metals.
- (A) Platinum (B) Copper  
(C) Silver (D) Gold
73. Heat is produced by :
- (A) Temperature (B) Energy  
(C) Momentum (D) Friction
74. Which one of the following is an example for Third Order Lever?
- (A) Wheel barrow (B) Nut cracker  
(C) Scissors (D) Fore arm