TIME: 3 HRS.  
MARKS: 75

Note: Attempt all questions.
All questions carry equal marks.
This paper carries negative marking. 25% marks will be deducted for each wrong answer.

Choose the correct answer.

1. What is the correct value of \( \pi \)?
   a) 22/7  
   b) 7/22  
   c) 3.4  
   d) 3/4

2. The outer diameter of a pipe is 100cm, and then the outer circumferences will be _______.
   a) 62.8 m\(^2\)  
   b) 628.32 mm\(^2\)  
   c) 6283.2 m\(^2\)  
   d) 628.32 cm\(^2\)

3. The pressure is given by _________.
   a) Force/Area  
   b) Area/Force  
   c) Stress/Strain  
   d) Strain/Stress

4. 2.5 tonnes can be expressed in kg as _________.
   a) 250 kg  
   b) 25 kN  
   c) 250 N  
   d) 2500 kg

5. Tan\( \theta \) is equal to _________.
   a) Cos\( \theta \)/Sin\( \theta \)  
   b) Opposite/Adjacent side  
   c) Adjacent side/Hypotenuse  
   d) Opposite/Hypotenuse

6. What is the correct value of \( \frac{22}{7} \times 350 \times 2 \)?
   a) 1100  
   b) 1200  
   c) 1800  
   d) 2200

7. The area of an equilateral triangle of side 8 mm is equal to _________.
   a) 27.7 mm\(^2\)  
   b) 27.7 cm\(^2\)  
   c) 2.7 cm\(^2\)  
   d) 88 mm\(^2\)

8. The area of a half circle, with radius \( r \), is given by _________.
   a) \( \frac{\pi r^2}{4} \)  
   b) \( \pi r^2 \)  
   c) \( \frac{\pi r^2}{8} \)  
   d) \( \frac{\pi r^2}{2} \)

Contd...2/-
9. 100° C can be written as ________.
   a) 100 F  b) 212 F  c) 36 F  d) 222 F

10. Mass/Volume refers to ________.
    a) Specific gravity  b) Density  c) Young modulus  d) Bulk modulus

11. What is the appropriate SI unit for distance?
    a) Centimeters  b) Inches  c) Meters  d) Kilometres

12. A homogenous material is defined as being ________.
    a) An element  b) Any material with uniform composition  c) Synonymous with “Solution”
    d) More than one of these

13. One horse power is equal to ________.
    a) 475 W  b) 1000 W  c) 746 W  d) 876 W

14. The sum of the internal angle of a triangle is ________ degree.
    a) 90  b) 180  c) 360  d) 270

15. 1 Gallon is equal to ________ litres.
    a) 3.785  b) 3  c) 4  d) 5.5

16. Brass is an alloy of ________.
    a) Copper and Zinc  b) Bronze and Iron  c) Iron and Steel  d) Aluminium and Copper

17. 110 F can be written as ________°C.
    a) 37  b) 40  c) 43.33  d) 27

18. A 50 cm radius and 250 cm height cylinder is melted to for a square cube, what will be the side of the cube so formed?
    a) 100 cm  b) 125 cm  c) 150 cm  d) 200 cm

19. If the value of tanθ = 1, then the value of cosθ will be ________.
    a) 1  b) 0  c) 1/2  d) 1/\sqrt{2}

20. One sq.m is equal to ________ sq.cm.
    a) 100  b) 1000  c) 10000  d) 10

21. The formula (Force x Displacement)/Time refers to ________.
    a) Power  b) Energy  c) Time  d) Work

22. An object can store energy as the result of its position. This stored energy of position is referred to as ________.
    a) Potential energy  b) Kinetic energy  c) Mechanical energy  d) Work

Contd...3/-
23. The unit of volume is ________.
   a) Sq.m        b) cu.m         c) cusec        d) m

24. Length, Mass and Time are known as ________.
   a) Fundamental quantities  b) Derived quantities  
   c) Similitude             d) SI Unit

25. Surface area of a cylinder is ________.
   a) \( \pi DH \)        b) \( \pi D \)       c) \( \pi H \)      d) \( DH \)