H-1

PAPER –II
WORKSHOP CALCULATION & SCIENCE & EMPLOYABILITY SKILLS
(MORNING SESSION)
8TH PASS (TWO YEAR TRADES)
SEMESTER –II

TIME: 3 HRS.   MARKS: 125

Note: This paper contains two parts – Part A & Part B.
   Attempt all the questions.
   All questions carry equal marks.
   This paper carries negative marking. 25 % marks will be deducted for each wrong answer.

PART – A (WORKSHOP CALCULATION & SCIENCE)   (75)

Choose the correct answer:

1. In pythoagross theorem the sum of squares of two short sides is equal to —
   a. The square on the hypotenuses
   b. The square of length
   c. The square of adjacent side
   d. Twice the length

2. The difference between the circumference and diameter of a circle is 28 cm. Find its radius:_
   a. 5.00 cm
   b. 5.50 cm
   c. 6.50 cm
   d. 6.53 cm

3. A cube has a volume of 7220 cm^3 find its side—
   a. 19.32 cm
   b. 22.5 cm
   c. 25.0 cm
   d. 1.932 cm

4. Which one is a like terms—
   a. 3x, 5x
   b. 2x, 5y
   c. 3xy, 2x
   d. 3x, 3xy

5. Factorize : x^4 - 81 —
   a. $(x + 3) (x -3)$
   b. $(x^2 + 3) (x^2 -3)$
   c. $(x^2 + 9) (x^2 -9)$
   d. $(x^2 - 3) (x^2 + 9)$

6. Name the non ferrous metal which is NOT used as a conductor of electricity—
   a. Aluminum
   b. Copper
   c. Lead
   d. Brass

7. Calculate the weight of metal cube of 40 mm side having a hole drilled of 20 mm diameter assuming the density as 7.8 gms/cc—
   a. 401.17 gms
   b. 40.117 gms
   c. 4.0117 gms
   d. 0.40117 gms

8. What is the maximum DIAGONAL OF A CIRCLE, inscribed in a square whose side is 25mm—
    a. diagonal of the square { $\sqrt{2}$ X a}   b. 50 mm
    c. 25 mm   d. 37.5 mm

9. Suppose double the voltage of a simple dc circuit and cut the resistance in half, then the current will be—
    a. Becomes four times as great   b. Becomes twice as great
    c. Stay the same as it was before   d. Becomes half as great

10. Which one of the is heat effect—
    a. Electric bell   b. Electric bulb filament
    c. Lead acid battery   d. Neon lamp

11. The volume of cone is 15 cm^3 , the volume of cylinder with same radius and height is —
    a. 15 cm^3 b. 30 cm^3
    c. 45 cm^3 d. 60 cm^3

12. The freezing point of water in degree Kelvin is—
    a. 0^0 K   b. 32^0 K
    c. 273^0 K   d. 373^0 K

13. The electric current flow from the source to the consuming device back again to the source is called —
    a. Open circuit   b. Short circuit
    c. Partial open circuit   d. Closed circuit

14. Find the equivalent value of -6x X -8y —
    a. -48 xy   b. 48 xy
    c. -14 xy   d. 2xy

15. The voltage supply to a filament to lamp is 10.8V. The voltage should be 12 V. Find the loss of voltage—
    a. 1.0 V   b. 1.2 V
    c. 1.3 V   d. 1.4 V

16. In metric system the unit of temperature is —
    a. Fahrenheit   b. Degree centigrade
    c. Kelvin   d. Reaumer

17. Which one of the stress is always less than ultimate stress —
    a. Shear stress   b. Tensile stress
    c. Compressive stress   d. Working stress

18. By hook's law within the elastic limit ratio of stress/ strain is constant, this constant is called as -
    a. Poisson's ratio   b. Young's modulus
    c. Bulk modulus   d. Rigidity modulus

19. What is the value of power if the resistors of 1500 ohms draws a current of 0.08 amps—
     a. 960 w   b. 96 w
     c. 9.6w   d. 0.96 w

20. The quantity of heat required to raise the temperature of 1 pound of water through $1^{0}F$ is called British Thermal Unit. 1 BTh U is equal to —
     a. 100 calorie   b. 250 calorie
     c. 252 calorie   d. 242 calorie

21. Which one of the following is equal to $\sqrt[n]{a^{x}}$ —
     a. $a^{\frac{x}{n}}$ b. $a^{\frac{n}{x}}$
     c. a^{nx} d. $a^{\frac{x}{\sqrt{n}}}$

22. A 14 cm diameter bolt 100 cms long carries a load of 3080 kg. calculate the value of stress in kg / cm^{2}
     a. 144 kg/cm^{2} b. 77 kg/cm^{2}
     c. 20 kg/cm^{2} d. 16 kg/cm^{2}

23. The ultimate stress of material is 4.0 kg per mm^{2} and the factor of safety is 5, find out the safe working stress—
     a. 1.0   b. 0.8
     c. 0.7   d. 0.5

24. The curved surface area of a solid sphere is 24 cm^{2}. If the sphere is divided into two hemi sphers then the total surface areas of one of the hemisphere is —
     a. 4 cm^{2} b. 6 cm^{2}
     c. 12 cm^{2} d. 18 cm^{2}

25. Solve for x if   4x = 3(35-x) —
     a. 5   b. 10
     c. 15   d. 20

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