

PAPER – II

DRAUGHTSMAN (CIVIL), DRAUGHTSMAN (MECHANIC), FITTER, MACHINIST, MACHINIST GRINDER, MECHANIC AGRICULTURE MACHINERY, MECHANIC MACHINE TOOL MAINTENANCE, MECHANIC MOTOR VEHICLE, MECHANIC RAC, OPERATOR ADVANCED MACHINE TOOLS, TOOL & DIE MAKER (DIES & MOULDS), TOOL & DIE MAKER (PRESS TOOLS, JIGS & FIXTURES), TURNER, REFRACTORY TECHNICIAN
(WORKSHOP CALCULATION & SCIENCE)
SEMESTER-IV

TIME : 3 HRS.

MARKS : 75

Note:- Attempt all the question.

All questions carry equal marks.

This paper carries negative marking. 25% marks will be deducted for each wrong answer.

Choose the correct answer:-

- The co-efficient of friction μ is equal to
(a) F/R (b) $F \cdot R$ (c) R/F (d) None of these
- What will be the co-efficient of friction when a force of 30 N is required to move a mass of 5 kg?
(a) 0.0875 (b) 0.8 (c) 0.795 (d) 0.695
- When the frictional force is equal to the applied force then the friction between two surfaces is known as-
(a) Dynamic friction (b) Limiting friction (c) Sliding friction (d) Rolling friction
- The property of one surface to oppose motion of another surface in contact is called
(a) Force (b) Friction (c) Both a&b (d) None of these
- The center of gravity of cone lies at
(a) $\frac{1}{4}$ x height of the cone (b) $\frac{1}{3}$ x height of the cone
(c) $\frac{2}{3}$ x height of the cone (d) $\frac{3}{4}$ x height of the cone
- A sheet of negligible thickness is called lamina and its C.G. is called –
(a) Center (b) Centroid (c) Mids (d) Bisectors
- Which is not the property of temporary magnet?
(a) Strength can be varied (b) Polarity can be changed
(c) Magnetizing can be controlled (d) N & S poles are always permanent
- Which one of the following is not the property of magnetic line of forces?
(a) While travelling in the same direction attract each other
(b) Behaves like a stretched elastic string
(c) They do not cross each other
(d) Pass through all media
- Which one of the following device has temporary magnet?
(a) Solenoids (b) loud speakers (c) ear phone (d) magnetic needle

10. Which insulation has resistance to heat, oil ageing and water?
 (a) Rubber (b) Neoprene artificial (c) PVC (d) Plastic
11. Which of the following wire is used as heating element?
 (a) Copper (b) Steel (c) Brass (d) Nichrome
12. The resistance of a conductor is calculated by
 (a) $R = A \times L/\rho$ (b) $R = \rho \times L/A$ (c) $R = \rho \times L \times A$ (d) $R = \rho \times A$
13. Which formula denotes straight line graph of the relationship between X and Y?
 (a) $Y = mX + C$ (b) $X = mY - C$ (c) $C = X - Y$ (d) $m = X + Y$
14. The point of intersection of two axes are called
 (a) 1st quadrant (b) 2nd quadrant (c) 3rd quadrant (d) origin
15. Coordinate of midpoint of line joining two points (36,5) and (6,10) are
 (a) (21, 7.5) (b) (15, 7.5) (c) (2.1, 21) (d) (7.5, 15)
16. 'Less than type distribution' and 'more than type distribution' are types of
 (a) Class distribution (b) Cumulative class distribution
 (c) Cumulative frequency distribution (d) Upper limits distribution
17. The arithmetic mean(average) of the first ten whole number is
 (a) 5.5 (b) 5 (c) 4 (d) 4.5
18. Which one of the following gas is used for gas carburizing?
 (a) Acetylene (b) Hydrogen (c) Methane (d) Oxygen
19. Which process is used for heat treatment of crank shaft?
 (a) Carburising (b) Tempering (c) Case hardening (d) Nitriding
20. Which one of the following is not a carburizing salt?
 (a) Sodium carbonate (b) Sodium sulphate (c) Sodium cyanide (d) Barium chloride
21. The Ideal gas equation is
 (a) $P/T = \text{constant}$ (b) $P/V = \text{constant}$ (c) $PV = \text{constant}$ (d) $PV/T = \text{Constant}$
22. Which law gives the relationship between volume and temperature of a mass of gas when pressure is constant?
 (a) Charles's law (b) Boyle's law (c) Gas law (d) Pascal law
23. At what temperature gas has no volume and it disappears?
 (a) 273°C (b) -273°C (c) 0°C (d) 100°C
24. Number of observations are 30 and value of arithmetic mean is 15, then sum of all values is
 (a) 15 (b) 450 (c) 200 (d) 45

18/A/C/S-4/4/E

K (3)

31/217, 32/224, 036/227, 042/222, 043/223,
047/216, 052/225, 055/215, 056/218, 058/226,
065/228, 066/229, 067/221, 274

25. A pulley revolving at 500 rpm is having a dia of 52 cm. The tension on the driving and slack of the belt are 50 kg and 25 kg respectively. Find out HP transmitted.

(a) 2.54 HP

(b) 25.4 HP

(c) 0.454 HP

(d) 4.54 HP
