

D

18/B/C/S-3/4/E

031/217, 032/224, 036/227, 042/222, 043/223,
047/216, 052/225, 055/215, 056/218, 058/226,
065/228, 066/229, 067/221, 274

PAPER – II
DRAUGHTSMAN CIVIL / DRAUGHTSMAN MECHANICAL / FITTER / MACHINIST
/ MACHINIST GRINDER / MECHANIC AGRICULTURE MACHINERY / MECHANIC
MACHINE TOOL MAINTENANCE / MECHANIC MOTOR VEHICLE / MECHANIC
REFRIGERATION AND AIR-CONDITIONING / OPERATOR ADVANCE MACHINE
TOOL / TOOL & DIE MAKER (DIES & MOULDS) / TOOL & DIE MAKER (PRESS
TOOLS, JIGS & FIXTURES) / TURNER / REFRACTORY TECHNICIAN
(WORKSHOP CALCULATION & SCIENCE)
SEMESTER – III

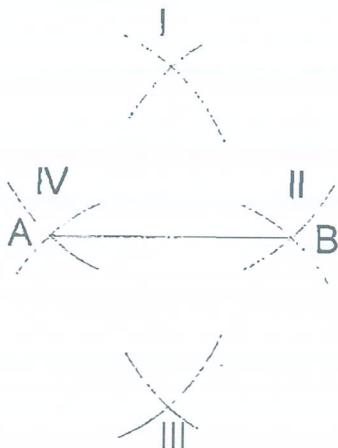
TIME: 3 Hrs.

MARKS : 75

Note: Attempt all the question.
All questions carry equal marks.

Choose the correct answer:

- By Hook's law within elastic limit $\frac{\text{Stress}}{\text{Strain}} = \text{constant}$. This constant is called as -
a) Poisson's ratio
b) Young's modulus
c) Bulk modulus
d) Rigidity modulus
- Line segment AB is shown in the diagram below. Which two sets of construction marks, labeled I, II, III, and IV, are part of the construction of the perpendicular bisector of line segment AB -



a) I and II

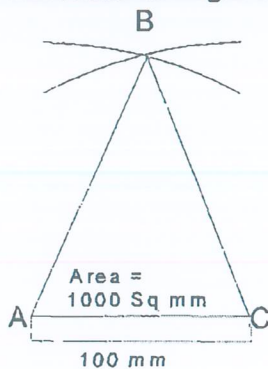
b) I and III

c) II and III

d) II and IV

11. A car covers a distance of 5 km in 5 mins, its average speed is equal to -
- a) 1 km / h
 - b) 25 km / h
 - c) 60 km / h
 - d) None of these

12. An Isosceles triangle has the base of 100mm as shown in the figure and it's area is 1000 mm². Find its length of sides -



- a) 10 mm
 - b) 15 mm
 - c) 20 mm
 - d) 25 mm
13. When a body offers resistance to deformation when acted by external load is called?
- a) Stress
 - b) Strain
 - c) Lateral Stress
 - d) Lateral Strain
14. Thermal conductivity of water in general with rise in temperature -
- a) Increases
 - b) Decreases
 - c) Remains constant
 - d) May increase or decrease depending on temperature

Contd...5/-

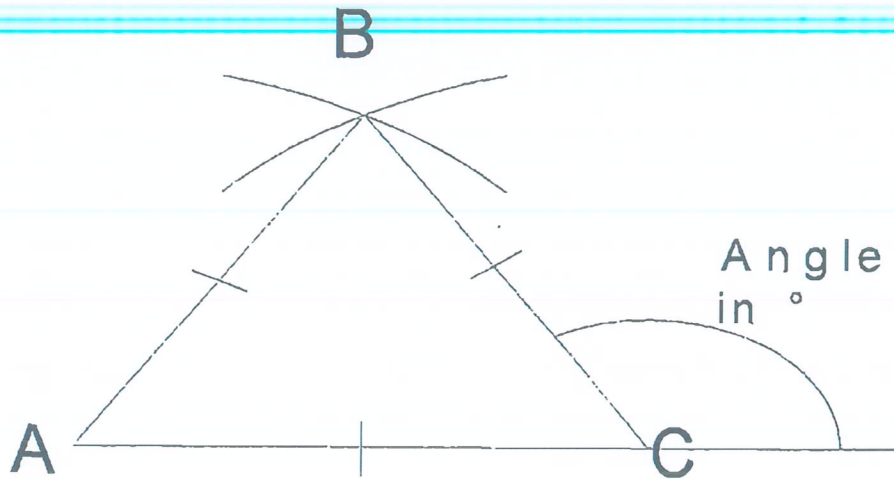
D

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-5-

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15. The value of x in the following figure is -



- a) 120°
- b) 180°
- c) 60°
- d) 100°

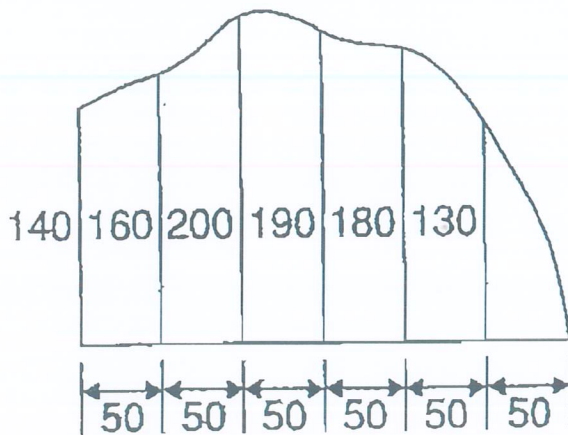
16. In order to keep the body moving in a circle, there exists a force on it that is directed towards centre of circle. This force is known as -

- a) Centrifugal force
- b) Centripetal force
- c) Gravitational force
- d) Magnetic force

17. The straight line distance travelled between the starting position to the final position of moving body is called -

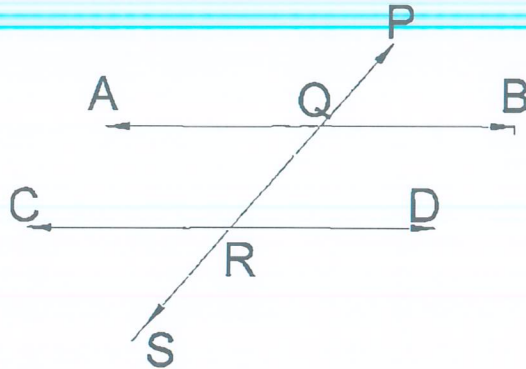
- a) Velocity
- b) Straight line
- c) Acceleration
- d) Displacement

18. The shape of a piece of land is shown below. To estimate the area of the land, a surveyor takes measurements at intervals of 50 m, perpendicular to the straight portion with the results shown (the dimensions being in meters). Estimate the area of the land in hectares (1 ha = 104 m²).



- a) 4.70 ha
b) 5.48 ha
c) 4.03 ha
d) 5.76 ha
19. One bucket has bigger side diameter of 20 cm and smaller diameter of 15 cm. Find the volume in liters of the bucket if the height is 20 cms -
- a) 4.560 liters
b) 4.840 liters
c) 4.485 liters
d) 4.580 liters
20. Object moving along a circular path is -
- a) In equilibrium
b) Not in equilibrium
c) Not moving with constant speed
d) In random motion

21. The two parallel lines are cut by a third line and forming alternate interior angles. Angle PQA is equal to which angles -



- a) Angle PQA = angle BQR
 b) angle PQA = angle QRC
 c) Angle PQA = angle PQB
 d) Angle PQA = angle QRD
22. In ductile material nominal breaking stress is -
 a) Lower than true breaking stress
 b) Equals with true breaking stress
 c) Higher than true breaking stress
 d) None of these
23. In melting of ice cube heat gain -
 a) Melts ice
 b) Increase temperature
 c) Gain energy
 d) Release energy
24. Device used for measuring temperatures is called a -
 a) Barometer
 b) Odometer
 c) Thermometer
 d) Speedometer

D

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-8-

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25. A roller bar should have a cross sectional area of $S = 500\text{mm}^2$. The diameter d (in mm) of the bar has to be calculated. Which one of the following formula is suitable for the purpose -

a) $d = \sqrt{\frac{4 \times 500}{\pi}} \text{ mm}$

b) $d = \sqrt{\frac{\pi \times 250}{4}} \text{ mm}$

c) $d = \sqrt{\frac{500}{4\pi}} \text{ mm}$

d) $d = \sqrt{\pi \times 500} \text{ mm}$
