

January 2019
Supplementary

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19/A/C/S-4/4/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 MECHANIC/ FITTER / MACHINIST /
MACHINIST GRINDER / MECHANIC AGRICULTURE MACHINERY / MECHANIC
MACHINE TOOL MAINTENANCE / MECHANIC MOTOR VEHICLE / MECHANIC
REFRIGERATION AND AIR-CONDITIONING / OPERATOR ADVANCE MACHINE
TOOLS / TOOL & DIE MAKER (DIES & MOULDS) / TOOL & DIE MAKER (PRESS
TOOLS, JIGS & FIXTURES) / TURNER / REFRACTORY TECHNICIAN
(WORKSHOP CALCULATION & SCIENCE)

SEMESTER - IV

TIME: 1.5 HRS.

MARKS: 75

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

Choose the correct answer: -

- 1. What is the value of x, if the average of the values 9, 6, 7, 8, 5 and x is 8?
a) 11 b) 12 c) 13 d) 14
- 2. What is the arithmetic mean of the data by direct method?

x	6	12	18	24	30	36
f	5	6	7	5	4	3

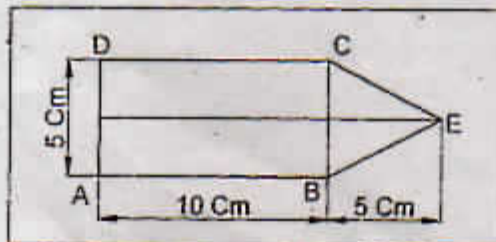
- a) 17.2 b) 18.2 c) 19.2 d) 20.2
- 3. What is the range, if the water tax bills of 10 houses in a locality area of Rs. 30, 32, 45, 78, 108, 15, 44, 66, 95, 110?
a) 98 b) 95 c) 90 d) 88
- 4. What is termed as the friction between two solid objects when at rest?
a) Static friction b) Sliding friction c) Rolling friction d) Angle of friction
- 5. What is the coefficient of friction, if a force of 30N is required to move a body of mass 35 kg on a flat surface horizontally at a constant velocity (Assume $g = 10 \text{ m/sec}^2$)?
a) $\mu = 0.075$ b) $\mu = 0.078$ c) $\mu = 0.080$ d) $\mu = 0.087$
- 6. What is the use of ceramic in electrical field?
a) Insulator b) Conductor c) Semi-conductor d) Super conductor
- 7. Which is liquid insulator?
a) Water b) Servo -20 c) Soluble oil d) Transformer oil

Contd...2/-

8. Which heat treatment process induces toughness and shock resistance?
a) Annealing b) Hardening c) Tempering d) Normalising
9. What is termed as the pressure applied at any point in a liquid at rest is transmitted equally in all directions?
a) Ohm's b) Pascal's c) Boyle's d) Charle's
10. What is the pressure, if a liquid force of 150N acts over an area 4m^2 ?
a) 38 N/m^2 b) 36.5 N/m^2 c) 38.5 N/m^2 d) 37.5 N/m^2
11. What is the change in pressure if the volume of gas 403 cm^3 of 770 mm pressure is reduced to 341 cm^3 ?
a) 800 mm b) 810 mm c) 900 mm d) 910 mm
12. What is the standard equation of a linear graph?
a) $y = \frac{mx+c}{2}$ b) $y = mx + c$ c) $y = mx - c$ d) $y = \frac{mx-c}{2}$
13. In which quadrant, the value (6, -9) is plotted?
a) Quadrant I b) Quadrant II c) Quadrant III d) Quadrant IV
14. What is the missing number for the given data?

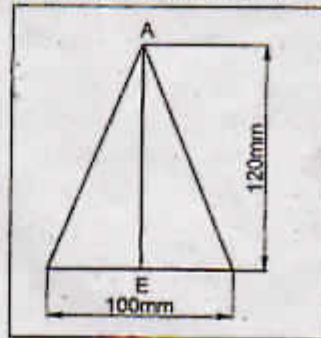
x	2	4	6	8	10
y	12	24	-	48	60

- a) 28 b) 32 c) 36 d) 40
15. What is the centre of gravity of thin lamina as shown in fig.

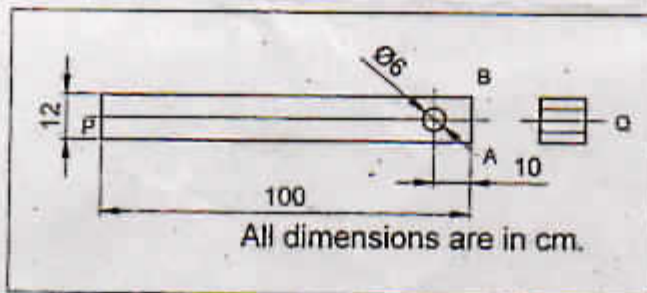


- a) 4.33 cm b) 5.33 cm c) 6.33 cm d) 7.33 cm

16. What is the area of right angle triangle and centroid, if a thin lamina consisting of an isosceles triangle of height 120 mm and base 100 mm?



- a) Area = 12 cm², centroid 2 cm
 b) Area = 60 cm², centroid 4 cm
 c) Area = 40 cm², centroid 3 cm
 d) Area = 120 cm², centroid 5 cm
17. What is the volume of strip if a hole dia 60 cm is removed from the steel strip of 100 x 12 x 12 cm?



- a) 14050.7 cm³ b) 14060.7 cm³ c) 14070.7 cm³ d) 14080.7 cm³
18. What is the basic source of magnetism?
 a) Magnetic dipoles b) Magnetic domain
 c) Charged particles alone d) Movement of charged particles
19. What is the flux density in Tesla units, if a flux of 400 μWb passes through an area of 0.0005 m²?
 a) 0.74 Tesla b) 0.80 Tesla c) 0.85 Tesla d) 0.95 Tesla
20. How much amount of current is required, if a coil with 400 turns provides 800 At of magnetizing force?
 a) 4 Ampere b) 3 Ampere c) 2 Ampere d) 1 Ampere

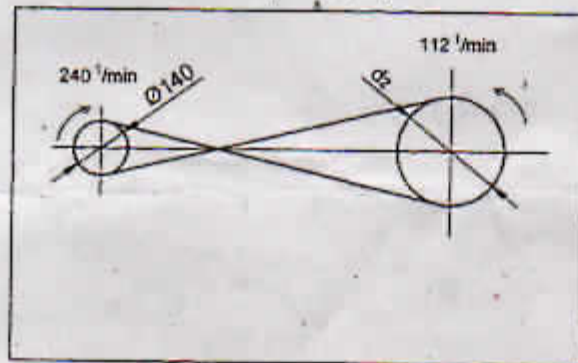
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21. What is the speed of shaft pulley dia 33 cm driven by belt, if engine pulley dia 55 cm is running at 150 rpm?
a) 250 rpm b) 300 rpm c) 325 rpm d) 350 rpm
22. What is the second component ratio for shaft connected through a compound gear train at 320 rpm by a motor running at 1440 rpm and the first component transmission ratio is 3:2?
a) 1:3 b) 3:1 c) 1:2 d) 2:1
23. What is the diameter of the driven pulley (d_2)?



- a) 250 mm b) 275 mm c) 300 mm d) 325 mm
24. What is the pressure of liquid force 100 N over an area of 2 m^2 ?
a) 25 N/m^2 b) 50 N/m^2 c) 75 N/m^2 d) 100 N/m^2
25. What is the absolute pressure of water at depth 12 m below the surface, if density is 1000 kg/m^3 and atmospheric pressure is 101 KN/m^2 ?
a) 222.72 KN b) 220.72 KN c) 218.72 KN d) 216.72 KN
