

1. Critical load acting axially on a long column

Ans: $(\pi)^2 * E * I / L^2$

2. Relation between moment of area and radius of gyration

Ans: $I = AK^2$

3. Cup shaped components are produced using which operation

Ans: drawing

4. A sheet of Al alloy having 2mm thickness is welded using which process

Ans: TIG

5. Two gears having teeth 18 and 40 and center distance 56...what is the module?

6. In thick cylinders, which of the following is true[*S stands for sigma*] (a) $S_t > S_r$ (b) $S_t = S_r$
© S_t

7. In a plane stress condition, if the centre of Mohr's circle coincides with the origin then which is true... ..the relation between S_x and S_y is asked

8. Lame's theorem... $F_1/\sin A = F_2/\sin B = F_3/\sin C$

9. Young's modulus value for steel=200Gpa

10. Thermal conductivity of silver=400w/m0K

11. Fouling factor formula..... $F.F = 1/U_{dirty} - 1/U_{clean}$

12. Relation between notch sensitivity factor and theoretical stress concentration factor

13. Effectiveness of heat exchanger definition

14. Reynolds's number formula

15. Clinical thermometer is which order system0,1,2, or 3

16. Piezometric transducer is used to find which signals—static or.... dynamic

17. Peclet number formula= $Re * Pr$

18. Radiation energy emitted, $E_{emitted} = S * A * T^4$

19. Which of the following is not related to CI engine

(a) Fuel pump (b) carburetor ©.. (d) none

20. Two connected in series having stiffness's K_1, K_2

$$K_{\text{equivalent}} = K_1 * K_2 / (K_1 + K_2)$$

21. Magnification factor at resonance, $MF = 1/2\zeta$
22. Coriolis's component value, $= 2v\omega$
23. Hooke's law holds good upto
(a) elastic point (b) UYP (c) LYP (d) Failure
24. Meshing of two gears fail if
(a) materials are different (b)
25. A beam whose one end is fixed and other is free is
(a) cantilever (b) fixed (c) Udl (d) none
26. Deflection at the free end of cantilever $= PL^3/3EI$
27. Shear stress, twisting moment given, find diameter....
28. Formula for polar moment of inertia of a hollow shaft
29. Formula for logarithmic decrement
30. A problem based on the above formula
31. Two questions on transmissibility (W/W_n ratio)
32. Question from vibration... mass, k given ... natural frequency
33. Two more questions, one each from riveted joints and cotter joint
34. $1 \text{ BHN} = \text{N/mm}^2$
35. Temperature limits, given to find Carnot's efficiency
36. Metacentric height is the distance between Metacentre and ——
Ans: Centre of gravity
37. Force and displacement vector given to find out the work done
38. Rotameter is used to find
(a) flow (b) velocity (c) pressure (d) density

In addition, 10-12 were asked from electrical basics.

SECTION-II — APTITUDE

VERBAL

Antonyms (5)-Facetious, Benign...

Synonyms (5)-very easy

Fill in the blanks (5):-a bit tough

2 Comprehension passages

Correction of sentences-(5)

Reasoning (5)