

No. of Printed Pages : 4

Roll No.

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DVOC (Level 4)
2nd Sem. / Industrial Tool Mfg.
Subject : General Mechanical Engineering-1

Time : 2 Hrs.

M.M. : 50

SECTION-A

Note: Very short questions. Attempt all ten questions.
(10x1=10)

- Q.1 If force acts on a body , it sets up some resistance to the deformation. This resistance is known as _____
- Q.2 Torque transmitted by a solid shaft of diameter (d) when subjected to shear stress(ζ) is _____
- Q.3 Steady flow means _____
- Q.4 The point of contraflexure is a point where _____
- Q.5 Which type of pulley is used for changing the speed of the driven shaft when the speed of driving shaft is constant?
- Q.6 Kaplan turbine is _____ head _____ flow turbine.
(low/high and radial/axial)
- Q.7 Reciprocating pumps are _____ displacement pumps. (positive/negative)

(40)

(4)

188744

(1)

188744

Q.8 What is the relation between diameter (d) of a rivet and thickness (t) of the main plate?

Q.9 Define Hooke's law.

Q.10 Cavitation in pump is likely to occur at (oulet/inlet)

SECTION-B

Note: Short answer type questions. Attempt any six questions out of eight questions. (6x5=30)

Q.11 Give the classification of pulleys.

Q.12 State the Bernoulli's theorem. List out its application.

Q.13 Draw the shear force and bending moment diagram of cantilever beam with a point load at its free end.

Q.14 Define strain. Explain its types.

Q.15 Define cohesion and adhesion. How do they affect the capillarity action for water and mercury?

Q.16 Describe the common types of riveted joints with neat sketches.

Q.17 Differentiate between impulse and reaction turbine.

Q.18 Write types off pulleys. Also find the diameter of pump pulley when a motor pulley is rotates with 1400 r.p.m. and pump pulley with 500 r.p.m. and if the diameter of the motor pulley is 100mm.

(2)

188744

SECTION-C

Note: Long answer questions. Attempt any one questions out of two questions. (1x10=10)

Q.19 Explain the construction and working of a centrifugal pump.

Q.20 A solid shaft is subjected to a torque of 1.6KNm. Find the necessary diameter of the shaft if the allowable shear stress is 60MPa. The allowable twist is 1 degree for 20 diameter length of the shaft. Take C=80MPa.

(3)

188744