

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2021-COURSE)

B. Tech. Sem - III R&AE : WINTER- 2022

SUBJECT : HYDRAULICS & PNEUMATICS PRINCIPALS

Day : Wednesday

Time : 10:00 AM-01:00 PM

Date : 07-12-2022

W-25352-2022

Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate full marks.
- 3) Assume Suitable **DATA** if necessary.
- 4) Draw neat and labelled diagram.

Q.1 Explain in detail with neat sketch the concept of surface tension and capillarity. [10]

OR

Q.1 Discuss in detail the equilibrium conditions when a submerged and floating body is given a slight angular displacement. [10]

Q.2 Discuss with neat sketch the different types of flows. [10]

OR

Q.2 Explain in detail the flow net. Also discuss the material derivative and acceleration. [10]

Q.3 Explain with neat sketch the construction and working of orifice meter and derive an equation for discharge. [10]

OR

Q.3 Derive an equation for pipes connected in series. Also explain hydraulic gradient line and total energy line. [10]

Q.4 Explain with neat sketch the different components of fluid power system. State its advantages. [10]

OR

Q.4 Give the classification of pumps. Explain with neat sketch the construction and working of centrifugal pumps. [10]

Q.5 Explain with neat sketch construction and working of pressure reducing valve. [10]

OR

Q.5 Discuss in detail with neat sketch construction and working of 3 way 2 position spool type direction control valve. [10]

Q.6 Differentiate between pneumatic and hydraulic power transmission. Explain with neat sketch the pneumatic circuit for shaper machine. [10]

OR

Q.6 Explain with neat sketch the follow: [10]

- a) Bleed off Circuit
- b) Regenerative circuit

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