



# GBGS SCHEME

15AU554

(08 Marks)

# Fifth Semester B.E. Degree Examination, Jan./Feb. 2021 Hydraulics and Pneumatics

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

# Module-1

- 1 a. State and explain Pascal's Law. (04 Marks)
  b. With a neat sketch explain pumping theory. (06 Marks)
  c. With a neat sketch explain external gear pump. (06Marks)
  - OR
- 2 a. With a neat sketch, explain balanced vane motor.
  b. With a neat sketch explain two types of Axial piston motors.
  (08 Marks)
  (08 Marks)

# Module-2

- a. With a graphical symbol. Explain any four directional control valve depending on actuation.

  (08 Marks)
  - b. Explain with a simple diagram the principle of working of a pilot operated pressure relief valve.

    (08 Marks)

# OR

- 4 a. Explain the desirable properties of hydraulic fluid. (08 Marks)
  - b. With a neat diagram, explain the function of different elements of a reservoir system.

# Module-3

- 5 a. Explain with a neat circuit diagram, the control of a double acting cylinder. (08 Marks)
  - b. Explain with a neat circuit diagram, the working of a regenerative circuit. (08 Marks)

#### OR

- 6 a. Explain with a neat circuit diagram the working of a locking cylinder curing pilot operated check valve. (08 Marks)
  - b. Explain with a simple sketch the construction of a diaphragm and Bladder type accumulator.

    (08 Marks)

### Module-4

- 7 a. How are pneumatic system classified and explain with a block diagram the structure of a pneumatic system. (08 Marks)
  - b. Explain the characteristics of compressed air and list out the disadvantages of air as an operating medium. (08 Marks)

#### OR

- 8 a. Explain with a neat sketch the construction of:
  - i) Magnetic type rodless cyinder ii) Cable type rodless cylinder. (08 Marks)
  - b. Explain with a neat diagram the construction and working of a 4/2 poppet valve. (08 Marks)

# Module-5

- 9 a. Explain the concept of motion step and motion time diagrams and the procedure for drawing them. (08 Marks)
  - b. Explain with a neat diagram working electropneumetic control of a double acting cylinder using a 4/2 solenoid actuated spring return DC valve. (08 Marks)

#### OR

- 10 a. How are compressors classified? Explain with a neat sketch the working of a single acting two stage compressor. (08 Marks)
  - b. With a neat sketch explain diaphragm and screw compressor. (08 Marks)

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