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Roll No .....

BE-203 (GS)

B.E. I & II Semester Examination, June 2020

Grading System (GS)

Basic Mechanical Engineering

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Explain the various mechanical properties of material.
   b) What is carbon steel?

2. a) Describe the construction and use of a sine bar. How will you measure taper of a job with the help of a sine bar?
   b) Enumerate various operations which can be performed on lathe.

3. a) State Pascal law. What do you mean by vacuum pressure.
   b) State Bernoulli's theorem and mention the assumptions involved in it.

4. Differentiate between the following:
   i) Laminar and turbulent flow
   ii) Turbine and compressor

5. What is lathe? Discuss the various parts of the lathe.

   OR

   Define HOOk'S law and explain stress-strain diagram of a ductile material.

6. A reversible heat engine delivers 0.5 kW power and rejects heat energy to a reservoir at 290 K at the rate of 22 kJ/min. Determine the cycle efficiency and temperature of the thermal reservoir supplying heat to the engine.

   OR

   Explain the working of a 4-stroke diesel engine with neat sketch.

7. a) Explain the following mechanical properties
      i) Hardness ii) Strength
      iii) Elasticity iv) Fatigue
   b) Explain any one method of measuring Hardness of a material in detail.

8. Write short notes on (any two):
   a) Dial gauge
   b) Machinability
   c) Natural draught
   d) Alloy steel

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