

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 Hooke'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

* * * * *