

Roll No. ....

**24008**

**B. Tech. 2nd Semester (Common for all  
Branches) (Re-Appear)  
Examination – October, 2020  
BASIC OF MECHANICAL ENGG.**

Paper : ME-101-F

*Time : 1.45 hours ]*

*[ Maximum Marks : 100*

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

**Note :** Attempt any *three* questions. All questions carry equal marks.

**1.** Explain the following :

- (a) Working principle of shaper machine
- (b) Functions of refrigerant
- (c) Uses of gear drive
- (d) Functions of manufacturing system
- (e) 2nd law of thermodynamics with suitable example.

**2.** (a) Describe various types of chips produced during metal machining.

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- (b) Derive an expression for work done in polytropic process.
  - (c) Explain specific heat at constant pressure with suitable example.
3. (a) Explain the principle of milling machine. Describe its working also.
- (b) Find out an expression for specific entropy of wet steam.
- (c) Describe importance of zeroth law of thermodynamics.
4. (a) Determine the COP of simple vapour compression refrigeration system.
- (b) What is the principle of reaction turbine? Explain working of Kaplan turbine with neat sketch.
- (c) Explain functions of draft tube.
5. (a) What is the principle of impulse turbine? Explain working of jetton wheel turbine with neat sketch.
- (b) What are the properties of a refrigerant?
- (c) Explain specific speed for a turbine.
6. (a) With neat sketch explain gear terminology.
- (b) Explain cone clutch with neat sketch.
- (c) Explain flexural loading.

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7. (a) What is load? Describe different types of loads.
- (b) Describe working of multi plate clutch.
- (c) Explain torsional loading.
8. Describe manufacturing system and its need in an industry. Explain its principle elements in detail.
9. What is Numerical control system? Classify NC machine tool. List its advantages also.

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