Bachelor of Engineering
Eighth Semester Main Examination, June-2021
Energy Management & Audit [ME-801(A)]
Branch-ME

<u>Time: 3:00 Hrs</u>   <u>Max Marks 70</u>

Note: **(i) Attempt any five questions out of eight.**
         (ii) All questions carry equal marks.

Q.1   (a) Define energy action and planning.
        (b) Define method for preparing process.

Q.2   (a) Data and information analysis in management.
        (b) What is banch making and energy cost?

Q.3   (a) Explain energy efficient motors.
        (b) Define cogenration and waste heat recovery.

Q.4   (a) Define heat exchanger and heat pump.
        (b) Define monitoring and targeting.

Q.5   (a) What do you mean by energy performance?
        (b) What do you mean by LMTD & NTU method.

Q.6   (a) Explain energy conservation in boiler.
        (b) What is facility as an energy system?

Q.7   (a) What do you understand by fuel & energy substitution?
        (b) What do you mean by concept of energy management?

Q.8   (a) Explain FBC.
        (b) What is mean by HAVC?
        (c) Duties and responsibilities of energy manager and auritor.
        (d) Basic concept of energy management.

Bachelor of Engineering
Eighth Semester Main Examination, June-2021
Machine Design [ME-802]
Branch-ME

<u>Time: 3:00 Hrs</u>   <u>Max Marks 70</u>

Note: **(i) Attempt any five questions out of eight.**
         (ii) All questions carry equal marks.

Q.1   Design a cast irori protected flange coupling to connect two shafts of   36   mm diameter transmitting 25 kW at 950 rpm. The overload   capacity is 1.3 times the average torque. The bolts and keys are made of C 20 steel and flanges are made of -FG250.

Q.2   Determine the module and face width of a helical gear tooth for a helical gear pair to transmit a power of 20 kW from a shaft rotating at   a speed of 1200 rpm to a parallel shaft to be 360 rpm maintaining a   Centre distances of 180 mm.

Q.3   What is optimization? Discuss different optimization techniques.

Q.4   Compare the stress distribution in an thin and thick walled pressure vessel.

Q.5   Discuss the construction of wire rope with the help of net sketch?

Q.6   Determine the principal dimensions of cylinder for a vertical four   stroke   compression engine from the following data: Brake power : 5   kW Speed : 1000   rpm indicated mean effective pressure : 0.35 MPa mechanical efficiency : 85%

Q.7   What is difference between double and herringbone helical gears? State advantages of these gear also.

Q.8   What are the advantages and disadvantages of flat belt drive?

Bachelor of Engineering
Eighth Semester Main Examination, June-2021
Refrigeration and Air Conditioning [ME-803]
Branch-ME

<u>**Time: 3:00 Hrs**</u>   **Max Marks 70**

Note: (i) Attempt any five questions out of eight.
        (ii) All questions carry equal marks.

Q.1   Describe with a line diagram and T-S diagram about regenerative air refrigeration.

Q.2   State the advantages and disadvantages of Electrolux refrigerator over conventional refrigerator

Q.3   Discuss the effect of suction pressure and supercharge on the performance of vapor compression system.

Q.4   State the properties and used of the following refrigerants-
        (i) Ammonia
        (ii) Carbon-dioxide
        (iii) R-12

Q.5   Discuss the effect of suction pressure and supercharge on the   performance of vapor compression system.

Q.6 Explain two stage compression with inter cooling and sub cooling by external cooling source.

Q.7 State the factor that determine human comfort sketch comfort chart and show on it the comfort zone.

Q.8 What is function of flash inter cooler provided in a compound vapor compression refrigeration system?

Bachelor of Engineering
Eighth Semester Main Examination, June-2021
CAD/ CAM/ CIM [ME-804]
Branch-ME

<u>**Time: 3:00 Hrs**</u>   **Max Marks 70**

Note: i) Attempt any five questions out of eight.
ii) All questions carry equal marks.
iii) Answer should be precise & to be point only.
iv) Assume suitable data if necessary & state them clearly.

Q.1 Different between DNC & CNC machine.

Q.2 Explain the concepts flexible manufacturing system.

Q.3 Discuss the batch and job shop production system.

Q.4 Describe the need of CIM and the issue addresses by CIM.

Q.5 What are various data exchange system? Explain in brief?

Q.6 What do you understand by the term rapid prototyping? Explain in brief.

Q.7 What is meant by swap? Example with example?

Q.8 What are the G and M codes? Explain with example?