Paper Code: U127-103 (RE-F&FS)

Marking Scheme of RE-Exam exam BME

Q1)

a) Any Six sheet metal operations.....6 M

b) Block Diagram of Lathe machine.....2 M

Explanation of Lathe machine.....2 M

List of Operations performed on lathe machine.....2 M

c) Diagram of sand casting process .....2 M

Explanation of sand casting process.....2 M

OR

Q2)

a) Classification of welding Processes.....2 M

Sketch of Metal arc welding.....2 M

Explanation of Metal arc welding.....2 M

b) Explanation of Any Six Drilling machine operations.....6 M

c) Explanation of four milling operations.....4 M

Q3)

a) Diagram of four stroke S. I. Engine.....2 M

Working of Four Stroke S. I. Engine.....4 M

b) Minimum Four Points of comparison between fire tube and water tube boilers.....4 M

c) Definition of one ton of refrigeration.....2 M

Definition of C.O.P. .....2 M

OR

Q4)

a) Sketch of one fire tube boiler..... 3 M

Explanation of any one fire tube boiler.....3 M

b) Sketch of window air conditioner.....2 M

Explanation of window air conditioner.....2 M

c) Minimum four points of Comparison of S. I. and C.I. Engines.....4 M

Note - Solution of MCQ is marked as in bold letters-----

01. In a non flow reversible 300 kJ of heat leaves the system consisting of a gas. The internal Energy of the gas remains the same. Calculate the work done. [02]

A 200kJ b 240 KJ **c -300 kJ** d 260 kJ

02. What will be the maximum efficiency of a heat engine operating between 227^0 C and 27^0 C_____ [02]

a) 30% **b) 40%** c) 20% d) 60%

03. Gear 1 rotates 1200 rpm in counter clockwise direction and engages with gear 3.Gear 3 and Gear 4 are mounted on same shaft .Gear 5 engages with Gear 4.The number of teeth on Gear 2 ,3,4 and 5 are 20 ,40,15 and 30 respectively. The angular speed of gear 5 is _____ [02]

a) 300 rpm b) 350 rpm c) 250 rpm d) 400 rpm

04. In the gearing machine tool, the motor shaft is connected to gear 4 and rotates at 975 rpm .the gear wheels B, C, D and E are fixed on parallel shaft rotating together. Gear C and D are mounted on same shaft. What is speed of gear F? The number of teeth on each gear is given below [02]

Gear	A	B	C	D	E	F
No of Teeth	20	50	25	75	26	65

a) 50 b) 52 c) 54 d) 56

05. According to first law of thermodynamics [02]

a) Total internal energy of a system during a process remains constant

b) Total energy of a system remains constant

c) Work done by a system is equal to the heat transferred by the system

d) None of the above

06. Grinding wheel is made up of_____ [02]

a) Steel b) cast iron c) ceramic d) **composite**

07. Carbon content of mild steel can be_____ [02]

a) 0.51% b) 0.85% c) **0.15%** d) 1.25%

08. The total capacity of the material to absorb energy without fracture is called [02]

a) Resilience b) malleability c) ductility d) **toughness**

09. Spur gears are used to transmit motion between ---------- shafts. [01]

a) Two perpendicular b) to inclined c) **two parallel** d) all of above

10. The following is not a ferrous material [01]

a) stainless steel b) alloy steel **c) brass** d) cast iron

11. Which among the following is correct relation between COP of heat pump and COP of refrigerator? [01]

a) $\mathbf{[COP]_{H.P.} = 1 + [COP]_{ref}}$ b) $[COP]_{H.P.} = 1 - [COP]_{ref}$

c) $[COP]_{H.P.} = [COP]_{ref}$ d) none of the above

12. The property which is important in wire drawing is [01]

a) malleability b) plasticity **c) ductility** d) resilience