Total No. of Questions : 8]

SEAT No. :

P6488

[Total No. of Pages : 2

[5868]-104
F.E.
SYSTEMS IN MECHANICAL ENGINEERING
(2019 Pattern) (Semester - II) (102003)

Time : 2½ Hours] *[Max. Marks : 70*

Course Outcome :

CO 3 : List down the types of road vehicles and their specifications.
CO 4 : Illustrate various basic parts and transmission system of a road vehicle.
CO 5 : Discuss several manufacturing processes and identify the suitable process.
CO 6 : Explain various types of mechanism and its application.

Instructions to the candidates:

1) ***Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.***
2) ***Assume suitable data if necessary.***
3) ***Figures to the right indicate full marks.***

Q1) a) Define Vehicle Specification. Explain following Engine specification. **[7]**

i) Power of Engine

ii) Cylinder Capacity

iii) Type of Transmission

b) Explain Electric Vehicle with neat diagram. **[7]**

c) Draw four stroke S I Engine diagram and labeled engine component on it. **[4]**

OR

Q2) a) Write short note on hybrid vehicle. Name any one example. **[7]**

b) Classify Automobile, Compare specification of two wheeler and LMV (two points). **[7]**

c) Write short note cost analysis of Vehicle. **[4]**

Q3) a) Expalain ABS system with neat diagram. **[7]**

b) Draw and Explain layout of an Automobile. **[7]**

c) Draw neat diagram of Single Plate Clutch. **[3]**

OR

P.T.O.

Q4) a) Explain water cooling used in vehicle with neat diagram. **[7]**

b) Explain Rear Engine Rear Wheel Drive System with neat diagram. **[7]**

c) Draw neat diagram of Drum Brake. **[3]**

Q5) a) Define and casting process. Write any two advantages, disadvantages and application each. **[7]**

b) Define sheet metal operation. Explain punching and blanking with neat diagram. **[7]**

c) Write short note on CNC Machine. **[4]**

OR

Q6) a) Define Machining operation. Explain turning and drilling operation principal with neat diagram. **[7]**

b) Explain Shielded metal arc welding with neat diagram. Write any one application. **[7]**

c) Write short note on IOT. **[4]**

Q7) a) Explain working of washing machine with neat diagram. **[7]**

b) Explain working of Solar Heater with neat diagram. **[7]**

c) Draw neat diagram of Water Tap. **[3]**

OR

Q8) a) Explain with neat diagram working of vaccum cleaner. **[7]**

b) Explain brake paddle with neat diagram. **[7]**

c) If Refrigerator is used to maintain temperature of 4ºC by removing 60kJ/sec of heat from inside with help of compressor of capacity 30kW. Compute COP of refrigerator. **[3]**

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