B.Tech. Second Semester (Food, Pulp, Oil, Petro) (Old)

Mechanical Technology : 2 SCT 2

P. Pages : 2 | AU - 3107

Time : Three Hours | Max. Marks : 80

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Notes : 1. Answer **three** question from Section A and **three** question from Section B.
2. Due credit will be given to neatness and adequate dimensions.
3. Illustrate your answer necessary with the help of neat sketches.

SECTION – A

1. a) What is cast iron? How it is manufactured? Discuss its important characteristics & uses of any three CI. **7**

b) Discuss the effect of any four alloying elements on cast iron. **6**

OR

2. a) Discuss important properties of metal. How each one of it affects the behaviour of metal. Discuss. **6**

b) Sketch Cupola and show various zones. Explain Cupola operations. **7**

3. a) Describe various properties of Moulding sand. What is sand conditioning and sand tempering. Discuss various alloying and binding elements used to prepare green sand Mould. **7**

b) With sketch describe. **6**

i) Sweep pattern.

ii) Skeleton pattern.

iii) Gated pattern.

OR

4. a) What is core? Why it is needed? Sketch & describe core seat, core print and different core boxes. **7**

b) Describe machine moulding and loam moulding with applications and advantages of each. **6**

5. a) Describe any four forging operations with sketch. **7**

b) Describe with sketch. **7**

i) Forging tools.

ii) Permanent mould casting.

OR

6. a) Describe any four casting defects with causes & remedies of each. 7

b) Compare gravity die casting & pressure die casting. Explain with sketch cold chamber die casting. 7

SECTION – B

7. a) Describe with neat sketch any two type mechanisms used in machine tools. 6

b) Describe with sketch crank and slotted lever quick return mechanism used in shaper. Why quick return is needed? 7

OR

8. a) Describe with sketch how speed transmissions can be obtained in machine tools. 6

b) Why compound gear trains are used in machines. With suitable example describe its use in a machine. 7

9. a) Describe how universal dividing head is used for differential indexing? Explain indexing. 7

b) Describe. 6

i) Drilling operations.

ii) Milling operations.

OR

10. a) With block diagram of shaper, explain its working & give its specifications. How does it differ from planer? 6

b) With sketch explain centerless grinder. How through feed grinding differ from plunge cut grinding. 7

11. a) How Resistance welding are classified. Explain and compare upset butt and flash butt welding with sketch of each. Give merits, demerits and application of each. 7

b) Define welding, soldering and brazing. Compare them. State applications, merits demerits of each. 7

OR

12. a) Describe principle of metal arc welding with sketch. Why flux powders are used. What are the contents of Flux powder. Describe function of each content. 7

b) Describe gas cutting torch with sketch. How gas cutting is performed. Explain. 7

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