Karunya University
(Karunya Institute of Technology and Sciences)
(Declared as Deemed to be University under Sec.3 of the UGC Act, 1965)

End Semester Examinations - 2015-16 Even Semester - May 2016

14ME3024 Design for Manufacturing and Assembly

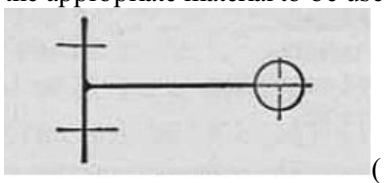
Set B

Time : 3 hrs
Total Marks: 100

1. a. Using appropriate sketches discuss the various methods of dimensioning.
   b. Explain the procedural steps involved in obtaining the limits for the carrier wheel assembly.

OR

2. Consider a bracket as shown in the figure below is required to be fitted to a tank in the open environment. Consider the support shaft of 20mm diameter, 160mm projection and mounting surface flat. Service life to be 12 years and cost as low as possible. Use a 10 point (0 to 9) rating scale and the evaluation plan and find out the appropriate material to be used. Materials: 1) Cast Iron 2) Mild steel 3) Steel.



(20M)

3. a. How the drilling entry and run-out is useful in the design of the drills for superior manufacturing.
   b. Summarize the important features of the keyways with neat sketches. i) Sunken and ii) Run-out

OR

4. a. Select an appropriate drilling tool to produce proper holes for the machine components.
   b. Discuss the method to identify the possible and probable parting line.

5. a. With neat sketches show the right and wrong methods involved in design for clampability.
   b. Sketch any five examples showing the right and wrong methods involved in design for accessibility.

OR

6. a. Consider a gear transmission box of two wheeler and list out the factors which helps in identifying the uneconomical design features.

   b. Suggest the re-designing factors which help in overcoming the uneconomical design of gear transmission box of a two wheeler.

7. a. sketch neatly and explain the advantages and limitations of the following.

   i) Holes produced by the mould sand of the boxes

   ii) Holes produced by special cored holes.

   b. explain the procedure to produce the machined holes of diameter 30 and more than 30. How machined holes can be produced through casting .

OR

8. a. list out the factor which will meet the customers' requirements for a good design. Give an example each.

   b. Explain the following methods used for finding the best possible solution with relevant sketches for a bell crank lever.

9. a. How group technology (GT) helps in better manufacturing. List out the GT principles for circular and cylindrical components.

   b. Explain the procedures involved in the classification and coding in GT.