Registration No. : | | | | | | | | | | |

Total number of printed pages – 2

B. Tech

PCME 4401

Seventh Semester Examination – 2013

PRODUCTION DESIGN AND PRODUCTION TOOLING

BRANCH : MECH

QUESTION CODE : C-260

Full Marks – 70

Time : 3 Hours

*Answer Question No. **1** which is compulsory and any **five** from the rest.*
The figures in the right-hand margin indicate marks.

1. Answer the following questions : 2×10

   (a) What do you mean by product specification? What are the components of it ?

   (b) Differentiate pressurised and unpressurised gating systems.

   (c) Compare open die forging and closed die forging.

   (d) How the forging die fasten with anvil block ?

   (e) Distinguish between blanking and piercing operation.

   (f) What is "stock stop" and "pilot" ?

   (g) Define a Jig and a Fixture.

   (h) Sketch a two way clamp.

   (i) What is the significance of process planning in industry ?

   (j) How the size of a turret lathe is specified ?

2. (a) Explain the different types of risers with advantages. 4

   (b) Calculate the size of a cylindrical riser necessary to feed a seal slab casting 30 cm × 30 cm × 6 cm with side riser, casting poured horizontally into the mould. 6

P.T.O.

3. (a) What are the different losses must be considered while calculating the stock size in case of forging ? 5

(b) Explain the tools used for flash trimming and hole piercing. 5

4. A symmetrical cup of 80 mm diameter and 250 mm height is to be fabricated on a deep drawing die. How many drawing operations will be necessary if no intervening annealing is done ? Also find the drawing force. 10

5. (a) Define product design and briefly discuss the different Design considerations. 5

(b) What is six point location principle? Explain it with help of suitable sketches. 5

6. Sketch a typical internal broach and its tooth shape. Explain, in detail, its different elements and aspects to design the same. 10

7. (a) Discuss various steps in process planning. 5

(b) Describe theTaylor's principle of limit gauge design. 5

8. Write short notes on any **four** : 2.5×4

(a) Role of computer in product design

(b) Upset forging die

(c) Stripper

(d) Form tool

(e) Drill Jig bushing.
