

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEMESTER VIII(OLD) EXAMINATION – WINTER 2017

Subject code: 182301

Date: 10-11-2017

Subject Name: Plastic Mould and Die Design-II

Time: 02:30 pm to 05:00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use Graph Paper

- Q.1** (a) Design a Fully Automatic Injection Machine mould for product shown in fig[a]. show feed system calculations **07**
 (b) Show cooling channel layout for core and cavity for the above mould . Use graph paper **07**

- Q.2** (a) For the product shown in fig[b], design a suitable split mould. **07**
 (b) Write C program for shot capacity. **07**
- OR**
- (b) Define : Finger Cam, Split Cavity, Water ways, Collapsible cores, pitch circle diameter, undercut, heat rods **07**

- Q.3** (a) Discuss about heat pipes. **07**
 (b) Discuss helical channel cooling in detail with diagrams. **07**

OR

- Q.3** (a) Write C program for plasticizing capacity. **07**
 (b) Discuss in detail about collapsible cores. **07**

- Q.4** (a) Determine the pitch and the pitch circle diameter for the interconnecting groove design , given that: **07**
 Diameter of insert = 50 mm
 Gap between inlet and outlet grooves = 5 mm
 Number of impressions = 24
 Depth of groove = 3mm
 (b) Discuss auto unscrewing mould for external undercuts. **07**
 Draw and explain any one design.

OR

- Q.4** (a) Fill in the balnks: **07**
1. Material of insert is _____
 2. _____mould can be used for Internal undercuts with half round threads
 3. I beam can be best moulded using _____mould
 4. Cooling for high depth cores is best done using_____
 5. Material of baffle is _____
 6. Best Cooling is accomplished using _____flow in multi level circuits.

Q.4 (b) Write a C program for heat to be extracted from the tool per hour **07**

Q.5 (a) The shot capacity of an injection moulding machine is 750 gms. The product to be moulded on this machine has weight of 35 gms in ABS. Work out the no.of impressions that can be moulded in a single shot. **07**

Given that :

Bulk factor of PS = 1.9

Bulk factor of ABS = 1.8

Specific gravity of PS = 1.04

Specific gravity of ABS= 1.0

(b) Discuss in detail about Heat Rods **07**

OR

Q.5 (a) Discuss actuation of split moulds using dog leg cams **07**

(b) Discuss in detail, cavity cooling. **07**
