

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII (NEW) EXAMINATION – WINTER 2017****Subject Code: 2182307****Date: 07/11/2017****Subject Name: Advanced Plastic Mould Design****Time: 02:30 PM TO 05:30 PM****Total Marks: 70****Instructions:**

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

MARKS

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|------------|---|-----------|
| Q.1 | (a) Define Split mould. Why do we use split moulds? | 03 |
| | (b) Discuss cooling of shallow inserts | 04 |
| | (c) Design a fully automatic injection mould for the product shown in fig[a] | 07 |
| Q.2 | (a) Define : waterways, locking heel, O ring | 03 |
| | (b) Discuss stripping of internal threads design | 04 |
| | (c) Determine the pitch and the pitch circle diameter for the interconnecting groove design , given the following information: Diameter of insert : 30mm ; Gap between inlet and outlet grooves : 4mm ; number of impressions : 14 ; depth of groove : 5mm. | 07 |
| | OR | |
| | (c) For the product shown in fig[a], draw a fully automatic injection machine mould. Use graph paper | 07 |
| Q.3 | (a) Fill in the blanks: | 03 |
| | a. _____ core cooling is preferred if we have deep cores. | |
| | b. Sprue puller is preferred for nylons | |
| | c. Material of O ring is _____ | |
| | (b) Write C program for shot capacity | 04 |
| | (c) Discuss various transmission systems for unscrewing moulds with sketches | 07 |
| | OR | |
| Q.3 | (a) What is shrinkage? Why should mould be designed considering shrinkage? | 03 |
| | (b) Write a C program for cooling period of Cycle | 04 |
| | (c) What is a sprue puller? Discuss various types with applications | 07 |
| Q.4 | (a) Write MOC for split cavity , O ring, locking heel | 03 |
| | (b) Write C program for no.of impressions | 04 |
| | (c) Discuss Heat Pipes | 07 |
| | OR | |
| Q.4 | (a) Differentiate between finger cam and dog leg cam for Split moulds | 03 |
| | (b) Where do we use a angled lift split mould? | 04 |
| | (c) Discuss in detail about cooling of DEEP cores | 07 |
| Q.5 | (a) Core withdrawal systems using hydraulics | 03 |
| | (b) Discuss Core withdrawal system using Rack & Pinion | 04 |
| | (c) Discuss in detail about Heat Pipes | 07 |

- Q.5** (a) Draw cooling layout for cavity in case of round caps , 8 **03**
impression mould.
- (b) Discuss in detail Collapsible cores **04**
- (c) List various methods of actuation of Split mould and **07**
discuss any one in detail

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