Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER–II EXAMINATION – SUMMER 2015

Subject Code: 2722807 **Date: 30/05/2015**

Subject Name: Tool & Die Design

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.**

Q.1	**(a)**	What are the steps involved in the Design procedure for Tool? Describe the all step in brief.	**07**
	(b)	What are the duties of Tool & Die Designer?	**07**
Q.2	**(a)**	Explain the Computer Application in Fixture Design and Analysis.	**07**
	(b)	The Feed of an 8-tooth face mill is 0.033cm per tooth at 200 rev./min. The material cut is 300 BHN steel. Depth of Cut is 0.32 cm and the width is 10 cm. Calculate the (a) H.P at the Cutter (b) H.P at the motor if the efficiency of the machine is 60%.	**07**
		OR	
	(b)	Describe the Design Principles of Centralizers.	**07**
Q.3	**(a)**	Explain the Computer application in Press tool design.	**07**
	(b)	Give the Design Procedure for Progressive dies.	**07**
		OR	
Q.3	**(a)**	Define the terms. i) Back up plate ii) Bolster plate iii) Knock out iv) Pitman with neat sketches.	**07**
	(b)	A steel washer of 30 mm outside dia. & 15 mm inside dia. from 1.6 mm thick sheet. The Ultimate shear strength of the material is 320 N/mm². Calculate a) Punch & die size & b) Die block size.	**07**
Q.4	**(a)**	Design consideration in Forging dies.	**07**
	(b)	Describe with neat sketch the construction of Multi-impression forging Die.	**07**
		OR	
Q.4	**(a)**	Explain following i) What are various methods of reducing cutting forces to prevent overloading of press? ii) What are the Advantages of Press Forging over Drop Forging?	**07**
	(b)	Explain the Design of Injection Moulding with Problems.	**07**
Q.5	**(a)**	Salient features of Mould Flow Analysis.	**07**
	(b)	Discuss the defects in Metal Die Casting Design.	**07**
		OR	
Q.5	**(a)**	Design Consideration of Die Casting Dies.	**07**
	(b)	Give the types of feeders used in Die Casting with neat sketch.	**07**

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