School of Aeronautics (Neemrana)

I-04, RIICO Industrial Area, Neemrana, Dist. Alwar, Rajasthan

Approved by Director General of Civil Aviation, Govt. of India, All India Council for Technical Education
Ministry of HRD, Govt of India & Affiliated to Rajasthan Technical University, Kota & BTU, Bikaner Rajasthan

Question Paper For Internal Assessment Examination (Theory) - Credit 3 / 43 / SET 1

Instructions For Students / FacultyMid Term I (Total 60 Marks, 2 HRS. Syllabus From Beginning Of Session)

• Part A: Total number of questions to be given are five, each carrying 3 marks and are compulsory to attend. There is no choice. They are short answer type questions **(Not More Than 25 Words For Both Question & Answer)**, no objective type or fill in the blanks. Total 15 marks.

• Part B: Total number of questions to be given are six, out of which student has to answer any four. They are long answer type (**Not More Than 50 Words For Question)**, each carrying 6 marks. Total 24 marks.

• Part C: Total number of questions to be given are four, out of which student has to answer any three. They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question)***, each carrying 7 marks. Total 21 marks.

Mid Term II & III (Total 90 Marks, 2.5 HRS. Syllabus From Beginning Of Session)

• Part A: Total number of questions to be given are ten, each carrying 2 marks and are compulsory to attend. There is no choice. They are short answer type questions **(Not More Than 25 Words For Both Question & Answer)**, no objective type or fill in the blanks. Total 20 marks

• Part B: Total number of questions to be given are seven, out of which student has to answer any five. They are long answer type (**Not More Than 50 Words For Question)**, each carrying 6 marks. Total 30 marks.

• Part C: Total number of questions to be given are five, out of which student has to answer any four. They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question)***, each carrying 10 marks. Total 40 marks.

*** LIST OF ELABORATIVE THEORY QUESTION SUBJECTS**: 3 MH4 - 07 Manufacturing Process, 4 AN4 - 06 Aircraft Materials and Processes (Cr 3), 5 AN4 - 05 Aircraft System (Cr 3), 6 AN4 - 05 Avionics-I (Cr 3), 6 MH4 - 03 Applied Hydraulics & Pneumatics (Cr 3), 6 MH5 - 11 Principles of Management (Cr 3), 6 MH5 - 13 Aircraft Electronics System (Cr 3), 7 AN5 - 12 Maintenance of Airframe and System (Cr 3), 7 AN5 - 13 Helicopter Theory (Cr 3), 7 AG6 - 60.1 Human Engineering and Safety (Cr 3), 7 ST - 01 Avionics II (Special Theory Subject) (Cr 3), 7 MH5 - 11 Design of Mechatronics Systems (Cr 3), 7 MH5 - 12 Robotics and Machine Vision System (Cr 3), 7 MH6 - 13 Medical Electronics (Cr 3), 7 AN6 - 60.1 Aircraft Avionic System (Cr 3), 8 AN5 - 12 Maintenance of Power Plant and System (Cr 3), 8 AN5 - 13 Unmanned Aerial Vehicles & Systems (UAV) (Cr 3), 8 MH5 - 13 Product Development & Launching (Cr 3), 8 EC6 - 60.2 Robotics and control (Cr 3)

FACULTY MEMBERS, PLEASE ENSURE EXCEPT ABOVE LISTED SUBJECTS, NO THEORITICAL ELABORATIVE QUESTION SHOULD BE GIVEN IN PART 'C' OF QUESTION PAPER

Question Paper & Student Details

Mid Term	Mid Term 3	**Date of Submission**	20/09/2020
Name of Faculty	Mr. Manbir Singh	**Date of Examination**	01/10/2020
Course	B.Tech (Mechatronics Engineering)	**Semester**	SEMESTER : 3
Batch	Fifth (5)	**Subject**	3 MH4 - 07 Manufacturing Process (Cr 3)

COURSE OUTCOMES FOR REFERENCE TO FRAME QUESTION PAPER
(Faculties are required to mention relevant Course Outcome number against the respective question in QP)

Course Outcome	3MH4 - 07 Manufacturing Process (credit-3) COURSE OBJECTIVE 1. To study the basic manufacturing processes like casting, welding and metal forming and tools used. 2. To decide which manufacturing technology can be implemented for a specific product. 3. To learn some rapid prototyping techniques. 4. To provide the students with overall knowledge on the manufacturing of plastic materials, their properties, applications, processing, product design, mold design, testing & quality control, and recycling through theory. COURSE OUTCOME 1. In foundry technology the student will have a broad knowledge of sand casting. 2. In welding technology students will have a generalized knowledge on various welding technology used in manufacturing. 3. In metal forming processes the students will have the knowledge on classification of different metal forming processes and analysis on metal forging, metal rolling, metal drawing, metal extrusion, sheet metal bending and sheet metal deep drawing processes. In each process they will also learn about the machines used, the processes to be followed, defects in them and their remedies. 4. They will understand the various powder forming techniques and understand causes of defects in Powder metallurgy processed materials and method to minimize defects. 5. Classify different rapid prototyping techniques 6. The plastic technology will help the students to take up responsibilities in production, testing, design and marketing in the plastics industries and contribute for the growth of industry.

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Student Name		**Student Reg No.**	

Part A			
Question : 1	Define Virtual prototyping		
35	Virtual prototyping	Manufacturing process by M.P. Groover.	6
Question : 2	What is the difference between epoxy and resin?		
38	epoxy and resin	Manufacturing process by M.P. Groover.	6
Question : 3	Define the foundry tools.		
4	foundry tools.	Manufacturing process by M.P. Groover.	1
Question : 4	What is foundry shop ?		
5	foundry	Manufacturing process by M.P. Groover.	1
Question : 5	What is gating system?		
8	gating system	Manufacturing process by M.P. Groover.	1
Question : 6	What is gating ratio in casting?		
7	gating system	Manufacturing process by M.P. Groover.	1
Question : 7	Which of the following casting is a combination of casting and forging?		
9	casting and forging	Manufacturing process by M.P. Groover.	1
Question : 8	How accurate is investment casting?		
12	investment casting	Manufacturing process by M.P. Groover.	1
Question : 9	What type of wax is used for investment casting?		
13	investment casting	Manufacturing process by M.P. Groover.	1
Question : 10	Which of the following is the main advantage of using investment casting method?		
	investment casting	Manufacturing process by M.P. Groover.	1
Part B			
Question : 1	Which of the following metal forming processes performs squeezing out of material through a hole?		
15	forming processes	Manufacturing process by M.P. Groover.	3
Question : 2	What are the different metal forming processes?		
16	forming processes	Manufacturing process by M.P. Groover.	3
Question : 3	Which material is not used for making non consumable electrodes? define its limitation.		
17	consumable electrodes	Manufacturing process by M.P. Groover.	2
Question : 4	How much current is required for arc welding? explain its advantages.		
18	welding	Manufacturing process by M.P. Groover.	2
Question : 5	What is the principle of gas welding? explain its advantages.		
19	welding	Manufacturing process by M.P. Groover.	2
Question : 6	Which of the following gas mixtures is not used in gas tungsten arc welding TIG?		
21	welding	Manufacturing process by M.P. Groover.	2

Question : 7	.Which material is not used as an iron coating on the electrode used in arc welding?		
22	welding	Manufacturing process by M.P. Groover.	2
Part C			
Question : 1	Explain any in detail Resistance Spot Welding , Resistance Projection Welding and Resistance Butt Welding		
20	Resistance Butt Welding	Manufacturing process by M.P. Groover.	2
Question : 2	Explain Forming is a process that changes the shape of the metal by changing its phase		
22	Forming	Manufacturing process by M.P. Groover.	3
Question : 3	Describe Which of the following metal forming processes performs squeezing out of material through a hole?		
23	Forming	Manufacturing process by M.P. Groover.	3
Question : 4	Which of the defect is eliminated by hot working process?		
25	hot working process	Manufacturing process by M.P. Groover.	3
Question : 5	. Why is additive manufacturing considered better for the environment than subtractive manufacturing?		
34	subtractive manufacturing	Manufacturing process by M.P. Groover.	5
Upload Scanned Document In Case of Numerical or Diagram For Any of The Above Questions. *(Mention question number with relevant fig / numerical / equations. Max 150 KB)*			
I have scrutinized the question paper. There is no spelling mistake or any type of irrelevant question.			

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