



INSTITUTE OF AERONAUTICAL ENGINEERING
(Autonomous)
 Dundigal- 500 043, Hyderabad.

AERONAUTICAL ENGINEERING
TUTORIAL QUESTION BANK

Course Name	:	AIRCRAFT PRODUCTION TECHNOLOGY
Course Code	:	A42104
Class	:	II B.Tech II semester
Branch	:	Aeronautical engineering
Year	:	2016-2017
Course Coordinator	:	Dr.D Govardhan,
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OBJECTIVE

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited.

In line with this, Faculty of Institute of Aeronautical Engineering, Hyderabad has taken a lead in incorporating philosophy of outcome based education in the process of problem solving and career development. So, all students of the institute should understand the depth and approach of course to be taught through this question bank, which will enhance learner's learning process

S.NO	QUESTION	BLOOMS TAXANOMY LEVEL	PROGRAM OUTCOME
CHAPTER 1 CASTING , WELDING AND BONDING TECHNIQUES			
PART-A (Short answer type question)			
1	Write various steps involved in casting.	Interpret	3
2	What is the purpose of Core?	Demonstrate	3
3	Describe briefly fundamental found production methods.	List	2
4	When will you use permanent mould casting?	Interpret	1
5	Define the production.	Define	2
6	State the classification of manufacturing process.	List out	3
7	Write merits and Demerits of the manufacturing process.	List out	1
8	Give some applications of production Technology in Aeronautical Industry.	Discuss	1
9	Write the steps involved in the selection of manufacturing.	List	2
10	Write the definition of casting and what are the steps involved in the process.	Explain	3

11	Briefly explain about the mechanical properties.	Explain	3
12	Give a short note of material properties.	Quote	3
13	Define welding.	Define	3
14	What is the permanent mould a die casting mould?	State	2
15	Describe briefly fundamental found production methods.	Describe	1
16	When will you use permanent mould casting?	Apply	3
17	Define the production.	Define	3
18	State the classification of manufacturing process.	State	3
19	Write types of joints.	List out	2
20	What is the use of electrodes? Classify it.	Classify	2
21	Classify the types of welding.	Classify	1
22	Write the principle of arc welding.	Describe	1
23	Describe briefly fundamental sheet metal instruments.	Describe	2
24	What is difference between bending and shearing	Differentiate	1
25	What is the use of electrodes? Classify it.	Classify	1
26	Define welding principle	Define	2
PART – B (Long Answer Questions)			
27	In general Aviation industry what is the importance of casting and moulding.	Interpret	2
28	Define the terms: Sprue, Gate, Drag and Parting line.	Define	2
29	What are the functions of Runner and raiser?	Demonstrate	1
30	With help of neat sketch diagram explain the investment casting.	Explain	1
31	Write the advantages and disadvantages of shell moulding.	List	1
32	Write the classifications of centrifugal casting.	Classify	1
33	Write the definition of casting and what are the steps involved in the process.	Define	2
34	List the classification of manufacturing process.	List	3
35	List the types under casting process?	List	3
36	List the types under forming process.	List	3
37	List any four advantages and disadvantages of manufacturing process.	List	3
38	Define sand casting.	Define	1
39	List the types under machining process.	List	1
40	Define die casting.	Define	2
41	List the types under centrifugal casting.	List	3
42	List the types of shell moulding.	List	3
43	Define centrifugal casting.	Define	1
44	List the advantages and disadvantages of welding process.	List	1
45	List the application of welding process.	List	2
46	Define the principle of soldering technique.	Define	3
47	Define the principle of brazing technique.	Define	3

48	Define the types of solder.	Define	1
49	Briefly explain surface cleaning and soldering flux in soldering process.	Explain	2
50	List the types under brazing process.	List	1
51	List difference between brazing & soldering.	Differentiate	3
52	Give a brief note about flux used in brazing.	Describe	2
PART – C (Problem Solving and Critical Thinking)			
53	Name several material and process variables that can influence product quality in metal.	Label	3
54	Casting (b) Forming and (c) Machining.	Define	3
55	Describe some special type of patterns and indicate the production circumstances in which each would be used.	Describe	1
56	Briefly explain about the mechanical properties.	Explain	3
57	Give a short note of material properties.	Describe	3
58	Chocolate is available in hollow shapes. What process is used to make these candies?	Demonstrate	2
59	Give some applications of production Technology in Aeronautical Industry.	Apply	3
60	Write the steps involved in the selection of manufacturing.	List	3
61	Write the definition of casting and what are the steps involved in the process.	Define	2
62	In general Aviation industry what is the importance of casting and moulding.	Apply	2
63	Describe the centrifugal casting process and what work piece configurations.	Describe	1
64	Describe some special type of patterns and indicate the production circumstances in which each would be used.	Describe	1
65	Briefly explain the mechanical properties.	Explain	2
66	Give a short note of material properties.	State	3
67	Write the steps involved in the selection of manufacturing.	List	3
68	Write the definition of casting and what are the steps involved in the process.	Define	2
69	In general Aviation industry what is the importance of casting and moulding.	Describe	2
70	Explain the criterion for the selection of process.	Explain	3
71	Explain the classification of manufacturing process.	Explain	1
72	Explain die casting process.	Explain	2
73	Explain centrifugal casting process.	Describe	3
74	Explain the advantages and disadvantages of manufacturing process.	Explain	3
75	Explain investment casting process.	Describe	2
76	Explain shell molding process.	Describe	2

77	Explain the types under centrifugal casting process.	List	3
78	Explain the types under shell molding process.	Explain	4
79	Briefly compare any two types of manufacturing processes.	Distinguish	3
80	Principles and equipment used in arc welding, gas welding, resistance welding, Thermit welding, recent advances in welding technology, Soldering and brazing techniques.	Enumerate	3
81	Write the working principle of gas welding and write advantages and disadvantages.	Explain	3
82	Give a short note and working principle of soldering and write advantages and disadvantages.	Enumerate	3
83	Write the working principle of brazing and write advantages and disadvantages.	Explain	2
84	Write the difference between soldering and brazing.	Differentiate	3
85	Briefly explain the working principle of resistance welding and write advantages and disadvantages.	List	1
86	Give a short note and working principle of arc welding equipment and write advantages and disadvantages.	List	1
87	Describe some special type of welding's and indicate the production circumstances in which each would be used.	Describe	2
88	Explain in detail the working and construction of percussion welding.	Summarize	3
89	Principles and equipment used in arc welding, gas welding, resistance welding, Thermit welding, recent advances in welding technology, Soldering and brazing techniques.	Classify	2
90	Write the working principle of gas welding and write advantages of and disadvantages.	Describe	1
91	Explain the working principle of Thermit welding.	Explain	1
92	Give a short note and working principle of soldering and write advantages of and disadvantages.	Describe	2
93	Write the difference between soldering and brazing.	Differentiate	3
94	Explain the principle of arc welding.	Explain	2
95	Explain the principle in resistance welding.	Explain	1
96	Explain the equipment's in arc welding.	Discuss	1
97	Explain the principle in gas welding.	Describe	2
98	Explain the equipment's in resistance welding.	Discuss	1
99	Explain the principle of Thermit welding.	Explain	2
100	Explain the equipment in Thermit welding.	Discuss	3
101	Explain the recent advances in welding technology.	Discover	1

102	Explain any two types of brazing process.	Discuss	3
103	Difference b/w welding, soldering and brazing	Explain	3
CHAPTER 2			
MACHINING AND SHEET METAL FORMING			
PART-A (Short answer type question)			
104	Define lathe.	Define	1
105	Define grinding operations.	Define	1
106	Explain the types of drilling process.	Explain	2
107	Explain drop stamp forming.	Explain	3
108	List the different types of bending operation.	List	2
109	List the types of milling operation.	Discuss	1
110	Write the different types of holding devices.	Describe	2
111	Write the principle of shearing operation	Discuss	2
PART – B (Long Answer Questions)			
112	What is advance metal forming process?	Quote	1
113	List the tool used in sheet metal.	List	2
114	State the sheet metal materials and tools.	List	1
115	Write the principle of shearing operation.	Explain	1
116	Explain punching operations.	Explain	1
117	Explain automation in bending.	Explain	3
118	Write a shot note on bending in single plane.	Describe	2
119	Bring out the differences between milling and grinding.	Differentiate	3
120	Explain the various types of rivets that are used in an aircraft industry	Explain	3
PART – C (Problem Solving and Critical Thinking)			
121	Briefly give a note on below operations	Discuss	1
	i. Punching		
	ii. Blanking		
	iii. Drawing.		
	iv. Cupping		
122	Why is blank holding necessary in a sheet metal drawing operation? Give the difference between Punching & Blanking	Enumerate	3
123	Bring out the differences between bending and shearing.	Differentiate	2
124	Explain the principle of working of engine lathe.	Explain	4
125	Explain the principle of working of milling machine.	Describe	4
126	Explain the principle of working of drilling machine.	Explain	2
127	Explain about sheet metal materials.	Discuss	1
128	Explain the operation of shearing and punching.	Differentiate	4
129	Explain the single plain operation.	Explain	1
130	Explain the working of shaper machine.	Explain	4
131	Explain the operation of stretch forming and drawing.	Explain	1
132	Explain the tools used in shearing operation.	List	4

133	Explain the tools used in drop stamp forming.	List	2
CHAPTER 3 UNCONVENTIONAL MACHINING			
PART-A (Short answer type question)			
134	List the application of Ultrasonic Machining.	List	1
135	Write the principle of Abrasive jet machining.	Describe	2
136	Define the plasma arc machining.	Define	3
137	State the principle of ultrasonic machining.	Enumerate	1
PART – B (Long Answer Questions)			
138	Give brief note on electric discharge machining	Describe	2
139	Explain the principle of electro chemical machining.	Describe	3
140	What is the laser beam machining?	Explain	1
141	List the application of Abrasive Jet Machining.	List	2
142	List the application of Laser beam Machining.	Explain	3
143	List the application of electron beam machining.	Explain	4
PART – C (Problem Solving and Critical Thinking)			
144	What is Electric Discharge Machining? When do you use reverse polarity in EDM?	Describe	4
145	Explain the working principle of ECM with a neat diagram. Write the advantages and applications electro chemical machining.	Describe	6
146	Explain in detail the working and construction of plasma arc machining. Give a neat sketch. Write advantages and disadvantages of plasma arc machining.	Describe	7
147	With help of neat diagram, explain the working procedure abrasive jet machining. Write some advantages, disadvantages and applications.	Explain	3
148	Give explanation of laser beam machining by using neat sketch. State some advantages, disadvantages and applications of laser beam machining.	Explain	2
149	What are the advantages and drawbacks of electric discharge machining process?	List	1
150	In detail explain the working and principle of electron beam machining with neat diagrams.	Describe	7
151	Write some merits and demerits and applications of the electron beam machining.	List	7
152	In machining process, explain the factors which affect the accuracy of machined surface, suggest various ways of reducing chatter.	Explain	8
153	What is over cutting in electro discharge machining process and how it is effected by amperage and frequency?	Illustrate	1
154	What are the various materials of which electrodes are made of electro discharge machining process and what are	List	10

	their advantages?		
155	Explain about abrasive jet machining.	Discuss	5
156	Write down the advantages of unconventional machining over conventional machining process.	List	6
CHAPTER 4			
HEAT TREATMENT AND SURFACE FINISHING			
PART-A (Short answer type question)			
157	Bring out the differences between Galvanizing and Tinning.	Differentiate	5
158	Explain the technology of surface finish.	Explain	5
159	Give a concept case hardening.	Discuss	6
160	State difference between hardening and case hardening.	Differentiate	5
161	Give a short note on Grinding and polishing	Describe	5
PART – B (Long Answer Questions)			
162	Bring out the differences between Galvanizing and Tinning.	Differentiate	2
163	Explain difference between polishing and grinding operation.	Differentiate	3
164	What is organic coating?	Define	5
165	What is thermal spray coating?	Define	5
166	What is case hardening process?	Define	4
167	How the treatment of aluminum alloy is done?	Explain	4
PART – C (Problem Solving and Critical Thinking)			
168	State difference between hardening and case hardening.	Differentiate	3
169	Give a short note on Grinding and polishing	Differentiate	5
170	Explain the heat treatment process of titanium alloy and steel.	Explain	5
171	Explain the procedure in corrosion prevention.	Describe	4
CHAPTER 5			
JIGS AND FIXTURES, QUALITY CONTROL AND ASSURANCE & NDT AND OTHER INSPECTION TECHNIQUES			
PART-A (Short answer type question)			
172	Explain the terms reliability and zero defect program.	Explain	5
173	Discuss the international standards.	Discuss	6
174	Define Six sigma quality.	Define	8
175	Give a short note on Dye penetrate test	Describe	7
176	Write the different types of holding devices.	Quote	6
177	What is the general function of locator pins?	Locate	6
178	Define quality circles	Define	8
179	Classify types of nondestructive tests.	Classify	9
180	Define the term Tool design.	Define	10
181	Define Jig.	Define	
PART – B (Long Answer Questions)			
182	What are inspection devices?	Discuss	11

183	State the purpose of jigs and fixtures.	Differentiate	5
184	Name some materials commonly used in jigs and fixtures.	List	6
185	What is quality planning?	Describe	7
186	What are the essential features of jigs?	Discuss	7
187	What are the elements of jigs and fixtures?	List	5
PART – C (Problem Solving and Critical Thinking)			
188	Explain different types of Jigs & fixtures and differences between them in detail.	Differentiate	4
189	Explain the terms in detail quality, reliability, quality circles. ISO, six-sigma quality.	Explain	5
190	What are the differences between destructive testing and non-destructive testing?	Differentiate	7
191	Explain why heat treatment process is done and give the advantages.	Explain	7
192	Explain different Annealing process.	Explain	8
193	“Jigs are most widely used in drilling operation” justify.	Discuss	6
194	“Design of Jigs and fixtures is a creative design” Explain.	Explain	
195	Differentiate between Jigs and Fixtures.	Differentiate	4
196	Classify Jigs and Fixtures.	Classify	5
197	Explain the principle of dye penetrate test.	Explain	5
198	Explain the principle of magnetic particle test.	Explain	6
199	Explain the principle of ultrasonic test.	Explain	7
200	What are international standards?	Define	8
201	Explain six sigma quality.	Describe	9
202	Explain the tools used for different joints.	Describe	10
203	Explain the equipment’s used for different joints.	Explain	9
204	Explain quality circles.	Define	5
205	Explain reliability.	Define	6
206	Explain the stages of assembly.	Discuss	8

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