



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad -500 043

## AERONAUTICAL ENGINEERING

### TUTORIAL QUESTION BANK

Course Name	:	AIRCRAFT MAINTENANCE ENGINEERING
Course Code	:	R15-A72117
Class	:	IV B. Tech I Semester
Branch	:	Aeronautical Engineering
Year	:	2018 – 2019
Course Coordinator	:	Ms D. Anitha, Assistant Professor, Department of AE
Course Faculty	:	Ms D. Anitha, Assistant Professor, Department of AE

#### OBJECTIVES

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 Taxonomy Level	Course Outcomes
<b>UNIT - I</b> <b>NECESSITY TO DO MAINTENANCE</b>			
<b>Part - A (Short Answer Questions)</b>			
1	Define maintenance and its necessity.	Remember	1
2	Explain the two types of maintenance.	Understand	1
3	Define the term Reliability in terms of maintenance	Understand	1
4	State the five objectives of maintenance.	Understand	3
5	Define the term Redesign of aviation maintenance program.	Understand	2
6	Define the term Failure rate patterns in aircraft maintenance.	Remember	1
7	What is role of the Engineer in maintenance operations?	Understand	1
8	What is role of the Mechanic in maintenance operations?	Understand	2
9	Write a few words on Organization of maintenance and engineering.	Remember	1
10	Differentiate the role of the Engineer and mechanic in maintenance operations	Remember	1
11	What is airworthiness responsibility in aircraft operations?	Remember	2

12	What is contract maintenance in aviation management?	Remember	1
13	Write the full form of MCC and define it.	Understand	1
14	Differentiate between quality assurance and quality control.	Understand	1
<b>Part - B (Long Answer Questions)</b>			
1	Explain about objectives of a maintenance program?	Remember	1
2	Write a summary on FAA requirements?	Understand	1
3	Write a few words on Organization of maintenance and engineering, Organization structure, M&E organization chart.	Remember	2
4	Explain the goals and objectives of maintenance.	Remember	2
5	Discuss any two managerial level functions of directors.	Understand	2
6	Explain the variations from the typical organization.	Remember	2
7	Describe the importance of Establish a maintenance program.	Understand	2
8	Explain about general groupings in aircraft maintenance.	Understand	1
9	Write a few words on Airworthiness responsibility and Maintenance manual	Understand	2
10	Write a few words on Maintenance organisation and Maintenance record keeping.	Understand	2
<b>Part - C (Problem Solving and Critical Thinking Questions)</b>			
1	Explain in detail the goals and objectives of aviation maintenance program.	Remember	3
2	Differentiate the Role of the Engineer and Role of the Mechanic	Remember	3
3	Explain managerial level functions of directors for Technical Services and Aircraft Maintenance	Remember	3
4	Explain about the term Reliability, Redesign and Failure rate patterns.	Remember	2
5	What are the maintenance considerations and how is a maintenance program is established?	Remember	3
6	What is Outline of aviation maintenance program? And Explain about TPPM.	Remember	3
7	Discuss in detail the five objectives of maintenance according to federal aviation administration.	Remember	2
8	State and explain major functions, organisations involved with federal aviation administration.	Remember	3
9	What are the three management techniques for addressing the in-service interruptions developed by the aviation industry?	Remember	3
10	Explain about Aircraft maintenance in Boeing 747 and failure rate patterns.	Remember	3
<b>UNIT - II</b>			
<b>DEVELOPMENT OF MAINTENANCE PROGRAMS</b>			
<b>Part – A (Short Answer Questions)</b>			
1	What is MSG in aviation field?	Remember	4
2	List out the maintenance tasks for aircraft systems?	Remember	3
3	Explain in brief about the current MSG process?	Understand	3
4	Define hard time process in aviation management.	Remember	3
5	Explain on-condition process in airport management.	Remember	3
6	List out condition monitoring process in aviation maintenance.	Remember	3
7	Explain task oriented maintenance in current MSG process.	Understand	3
8	What is transit check in airline industry?	Understand	3

9	Explain Zonal maintenance task in aviation industry.	Remember	3
10	What are maintenance tasks for structural items?	Remember	3
<b>Part - B (Long Answer Questions)</b>			
1	Explain maintenance steering group MSG approach?	Understand	3
2	Write a few words on task oriented maintenance?	Understand	4
3	Briefly explain the flow chart in current Maintenance Steering Group process MSG-3, level I?	Understand	4
4	Explain the flow chart in current MSG process MSG-3, level II?	Understand	4
5	Justify why maintenance programs are needed in airline industry.	Understand	3
6	Explain about the basic changes in maintenance intervals.	Understand	3
7	Briefly Explain about the Process-Oriented maintenance with neat sketch.	Understand	1
8	Explain basic maintenance intervals with block diagram.	Understand	2
9	List out maintenance program documents and explain briefly.	Understand	2
10	What is the difference between MSG2 and MSG3	Remember	3
<b>Part – C (Problem Solving and Critical Thinking)</b>			
1	Explain in detail about maintenance program documents?	Understand	2
2	What is the difference between Process-Oriented maintenance and task oriented maintenance?	Remember	4
3	What is maintenance steering group -3? Explain in detail.	Remember	4
4	What are the developments of maintenance programs?	Remember	4
5	Describe maintenance steering group Approach	Understand	2
<b>UNIT-III TECHNICAL SERVICES</b>			
<b>Part - A (Short Answer Questions)</b>			
1	Define technical services and name any one of technical services.	Remember	5
2	Define Engineering Order Preparation according to aircraft maintenance programs.	Understand	5
3	Write briefly about Production planning in aviation management.	Understand	6
4	List the functions of engineering department and any one briefly.	Understand	5
5	Write briefly about Feedback for planning in technical services.	Understand	7
6	List the aviation technical services in engineering department.	Remember	5
7	What is the time period for technical services training?	Understand	5
8	Write briefly about Production control?	Remember	8
9	Define the role of mechanics in technical services?	Understand	5
10	Write down the role of engineers in technical services?	Remember	5
11	List the functions of organization of PP&C?	Remember	5
1	List the airline training courses?	Remember	5
2	Define technical publications.	Understand	5
3	What are airline libraries?	Remember	6
4	Explain the functions of technical publications	Remember	5
5	How to Remember changes in maintenance program?	Understand	6
6	Explain about EO in aviation field.	Remember	5

7	What is formal training in technical services?	Understand	7
8	Explain organizational training.	Understand	5
9	What is manufacturer or vendor training?	Remember	8
10	What is OJT?	Understand	6
11	Discuss maintenance resources management.	Remember	6
<b>Part – B (Long Answer Questions)</b>			
1	Explain about development of the maintenance program.	Understand	5
2	Briefly Explain about engineering order preparation	Remember	8
3	Difference between “A” check, “B” check, “C” check,	Remember	7
4	Explain briefly production planning and control forecasting.	Understand	6
5	List the engineering department functions with block diagram	Remember	6
1	What are airframe manufacturers training courses? Explain any two of them.	Understand	5
2	Explain the importance of computer support airlines and write its uses.	Understand	6
3	Describe the “A” check planning of aircraft maintenance in detail	Remember	7
4	Name technical publications of airline industry and write its functions.	Remember	6
5	Briefly explain “B” check planning of aircraft maintenance in detail	Understand	8
6	What is technical training organisation and explain briefly about its functions.	Understand	6
7	Discuss about “C” check planning of aircraft maintenance in detail	Understand	6
8	Different types of training activities for aviation maintenance. (Any four)	Understand	6
<b>Part – C (Problem Solving and Critical Thinking)</b>			
1	Explain engineering department functions briefly with flow chart.	Remember	5
2	a. What are technical publications? b. What are their functions and how are they controlled?	Remember	5
3	Explain the training methodologies required for Aviation maintenance?	Remember	7
4	Explain in detail about the role of engineers and mechanic in aviation field.	Understand	6
1	What are the Airframe manufacturers’s training courses and the other Airline training courses?	Remember	7
2	Difference between aircraft maintenance engineering and aeronautical engineering.	Remember	6
3	What comes under the director of technical services in aircraft maintenance program? Explain in detail.	Remember	8
4	What is Production planning and control? Explain in detail with block diagram.	Remember	6
<b>UNIT-IV</b>			
<b>MAINTENANCE AND MATERIAL SUPPORT</b>			
<b>Part – A (Short Answer Questions)</b>			
1	Define problem areas in hangar maintenance	Remember	9
2	What is meant by hangar maintenance?	Remember	7

3	Discuss about maintenance support shops in hangar maintenance.	Remember	8
4	What are the preparations for “C” check?	Remember	7
5	Define engine shops of hangar maintenance organization.	Remember	7
6	What are the types of overhaul shops?	Remember	10
7	Illustrate avionics shops of hangar maintenance organization.	Understand	7
8	Discuss about mechanical shops of hangar maintenance organization.	Remember	7
9	Discuss about outsourcing of shop maintenance work in hangar maintenance organization.	Remember	10
10	List some of the maintenance crew requirements.	Understand	7

**Part – B (Long Answer Questions)**

1	What are the functions that control maintenance and explain briefly?	Remember	7
2	State and explain the responsibilities of maintenance control centre.	Understand	10
3	Explain about the information stored in aircraft logbook	Remember	7
4	Discuss about the maintenance crew skill requirements.	Understand	11
5	What are the problems in ground support equipment in hangar maintenance?	Remember	11
6	What is the role of mechanic in conduction of “C” check	Understand	10
7	List the types of shops in hangar maintenance organization.	Understand	9
8	Briefly explain about Parts handling in Maintenance and engineering support functions of material?	Remember	12
9	Discuss in brief about Parts control in M&E support functions of material?	Remember	9
10	Describe the Parts issue in Maintenance and engineering support functions of material?	Remember	10

**Part – C (Problem Solving and Critical Thinking)**

1	With the help of a flow chart explain line maintenance operations.	Remember	10
2	Identify the problem areas in hanger maintenance? Explain any two problem areas.	Understand	9
3	With help of flow chart write about ground support equipment categories.	Remember	12
4	Discuss in brief about Parts ordering in Maintenance and engineering support functions of material?	Remember	10
5	Write about operation of overhaul shops in hangar maintenance organization.	Understand	11
6	Discuss in brief about M&E support functions of material?	Remember	11
7	Write in detail about a typical “C” check with neat sketch.	Remember	9
8	List the general line maintenance operations? Discuss in detail.	Remember	12
9	Briefly explain the Organizational chart for maintenance and material.	Remember	9
10	Discuss about stock level adjustments and budgeting efforts.	Remember	10

**UNIT-V  
OVERSIGHT FUNCTIONS**

**Part - A (Short Answer Questions)**

1	Define type certificate in aircraft certification?	Remember	13
2	Illustrate the production certificate in aircraft certification?	Remember	15

3	Explain about AMM manual in airline industry.	Remember	15
4	Write the full form of JAA.	Remember	14
5	Define operator certificate?	Remember	13
6	What is IPC in aircraft maintenance?	Understand	15
7	Define FRM manual in airline industry.	Remember	14
8	What is airworthiness certificate in aircraft certification?	Remember	13
9	Define MPD in aviation field.	Understand	12
10	What is Advisory circular and MEL?	Remember	15
<b>Part - B (Long Answer Questions)</b>			
1	Explain the manufacturer's documentation according to airline industry?	Understand	13
2	Describe the regulatory documentation in aircraft maintenance program?	Understand	15
3	What is airline generated documentation according to airline industry?	Understand	15
4	List out the ATA document standards in aircraft maintenance program?	Remember	13
5	Explain about TPPM in oversight functions.	Remember	15
6	What are quality audits? Explain briefly.	Understand	15
7	What is ISO 9000 Quality standard and how it is related to aviation industry?	Remember	14
8	Explain about quality control organization in aviation field.	Understand	13
9	Differentiate between FAA and JAA?	Understand	15
10	What are the basic inspection policies in quality control and explain briefly.	Understand	13
<b>Part - C (Problem Solving and Critical Thinking)</b>			
1	List the Aviation industry certification requirements and its types?	Remember	13
2	List out the types of documentations for maintenance? Explain briefly.	Remember	15
3	What are ATA document standards? Explain briefly about them.	Remember	15
4	Define reliability and explain the elements of a reliability program?	Remember	14
5	List the quality control activities and inspection policies.	Remember	13
6	Explain the technical records in detail how they will be stored for the future records?	Remember	13
7	List out the types of certifications for maintenance? Explain briefly.	Remember	15
8	Explain how a quality audit varies from quality control for aircraft maintenance.	Remember	13
9	Differentiate between quality audit and quality control in maintenance	Understand	15

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