Register Number:……..

KUMARAGURU
college of technology
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B.E DEGREE EXAMINATIONS : MAY 2018

(Regulation 2015)

Sixth Semester

AERONAUTICAL ENGINEERING

U15AEE022:Aircraft Maintenance, Repair and Overhaul

COURSE OUTCOMES

CO1: Identify and maintain the equipment's used in welding shop.

CO2: Apply the Inspection and Maintenance procedures for sheet metal, plastics and composite components.

CO3: Apply the Inspection and Maintenance procedures for various aircraft systems.

CO4: Identify the levels of maintenance including overhaul and extent of intervention and critical operations.

CO5: Apply methods of storage and handling of materials in shop floor.

CO6: Identify various trouble shooting processes available in aircraft industry.

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. CO1 [K_1]

List I	List II
A. Pitch & roll	1. Collective
B. All rotor blade pitch	2. Anti torque pedal
C. Tail rotor thrust	3. Throttle
D. Engine power	4. Cyclic

	A	B	C	D
a)	2	1	4	3
b)	4	1	2	3
c)	3	4	1	2
d)	2	4	1	3

2. Gauge is a distance between _____ CO2 [K_1]

a) rivet rows b) rivet column

c) Sheet edge to rivet d) row to column

3. _____may be used to acrylic-based paints from Plexiglas as well as paint that have been in place for an extended period. CO2 [K_2]

a) Cyclohexanone b) Sandblasting

c) Trialene Soap d) Aliphatic Naphtha

4. PPE is elaborated as_____ in composite industry. CO1 [K_2]

a) Personal Preference Equipment b) Personal Protection Equipment

c) Personal Prevention Equipment d) Personal Passing Equipment

5. 1. Soft Soldering CO3 [K2]

2. Brazing

3. Welding

4. Silver soldering

Sequence the about metal joining methods with respect to joint strength in descending order

a) 4,3,2,1 b) 2,4,1.3

c) 4,3,1,2 d) 3,2,4,1

6. The horizontal distance of an equipment located from the datum is called as _____ CO3 [K_2]

a) Moment b) Length

c) Arm d) Height

7. Assertion (A) : Jigs are the device which guides the large component assemblies (K2) CO2 [K_2]

Reason (R) : Fixtures also can assist assembly process

a) both A and R are individually true and R is the correct explanation of A b) both A and R are individually true but R is not the correct explanation of A

c) A is true but R is false d) A is false but R is true

8. Water from air-conditioning system is removed using _____ CO1 [K_2]

a) Suction b) Evacuation

c) Ejection d) Rejection

9. In hazardous material handling EPA refers to _____ CO5 [K_2]

a) Entire Protection Agency b) Energy Protection Agency

c) Environmental Protection Agency d) Equal Protection Agency

10. _____ is the process where the filler metal has melting point of more than800^{o} F CO2 [K_1]

a) soldering b) Brazing

c) sweating d) Welding

PART B (10 x 2 = 20 Marks)

(Answer not more than 40 words)

11.	What is fusion welding? Give its types.	CO1	[K_1]
12.	What is crazing? Mention its significance.	CO5	[K_2]
13.	What are the three classification of sheet metal damage?	CO3	[K_2]
14.	Give some of the identification methods for Acrylics based and Acetates based clear plastics.	CO3	[K_1]
15.	What is Autorotation?	CO4	[K_2]
16.	Define Datum and Arm of an aircraft.	CO2	[K_2]
17.	Differentiate between vapor-cycle and air-cycle cooling systems.	CO2	[K_2]
18.	What is outflow valve? Mention its importance.	CO5	[K_2]
19.	What is APU? When do you need it?	CO5	[K_2]
20.	Expand FACTOR. Give its importance in material handling.	CO5	[K_1]

Answer any FIVE Questions:-

PART C (5 x 14 = 70 Marks)

(Answer not more than 300 words)

Q.No. 21 is Compulsory

21.	(i) Write in detail about the general design guidelines of a riveted repair design.	(7)	CO1	[K_1]
	(ii) Explain in detail about the procedure of Aircraft Weighing process.	(7)	CO2	[K_2]
22.	List down the NDI methods used in aircraft industry & explain any two methods with suitable sketch.		CO1	[K_2]
23.	List and explain in detail about the methods available for tracking and balancing of Helicopter main rotor.		CO5	[K_2]
24.	Write in detail about the composite repair schemes with suitable sketch.		CO4	[K_2]

25. Summarize the inspection and maintenance process of aircraft air-conditioning system and pressurization with suitable sketches. CO2 [K_4]

26. Short notes on: CO5 [K_2]

    (i) Rain-Repellent Systems (7)

    (ii) Pneumatic Rain-Removal System (7)

27. Explain in detail about the different format of troubleshooting charts available in aviation industry. CO5 [K_2]

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