



B.E DEGREE EXAMINATIONS: APRIL 2018

(Regulation 2014)

Eighth Semester

AERONAUTICAL ENGINEERING

U14AEE801: Aviation, Quality Assurance, Safety Rules and Regulations, Certification Standards, Licensing

COURSE OUTCOMES

CO1: Understand the various aviation standards in quality assurance, safety rules and regulations

CO2: Understand the certification standards and licensing standards.

CO3: Understand various aeronautical organization standards and regulations.

CO4: Understand aviation laws and regulations related to each type of organization.

CO5: Analyze flight testing certification standards.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Matching type item with multiple choice code

CO1 [K₃]

List I	List II
A. CAR Series A	i. Maintenance programs
B. CAR Series E	ii. AME Licenses.
C. CAR Series D	iii. Approval of Organizations
D. CAR Series L & M	iv. General policy & procedures adopted by DGCA

	A	B	C	D
a)	ii	i	iii	iv
b)	iii	iv	ii	i
c)	iv	iii	i	ii
d)	iii	i	ii	iv

2. A list containing items of inspection/action to be performed by the flight crew, in the order as listed, and in the circumstances as indicated for ensuring safe operation of aircraft is

CO1 [K₂]

- | | |
|-------------------------|---------------------------------|
| a) Emergency Check List | b) Minimum Equipment List |
| c) Cockpit Check list | d) Configuration Deviation List |

3. Medical Requirements for Flight Crew Licenses CO2 [K₂]
- | | |
|---------------------------------|----------------|
| 1. Visual and colour perception | 2. Congenital |
| 3. Physical and mental | 4. Abnormality |
| a) 1,2 | b) 1,4 |
| c) 1,3 | d) 2,3 |
4. DGCA issues the following flight crew licenses under the provisions of Rule 38 and Schedule II of the Aircraft Rules, 1937. CO2 [K₂]
- | | |
|----------|----------------------------|
| a) Pilot | b) Quality Control Manager |
| c) AME | d) Flight operator |
5. Assertion (A): Defect observed by the crew, during preflight, in-flight and post-flight periods must be entered in the relevant columns of the flight report, giving full details of their observations, with relevance to parameter readings, where applicable. CO3 [K₄]
Reason (R): Reports should be used for monitoring, investigating and reporting from the operators to organization.
- | | |
|--|--|
| a) Both A and R are Individually true and R is the correct reason of A | b) Both A and R are Individually true but R is not the correct reason of A |
| c) A is true but R is false | d) A is false but R is true |
6. The aircraft continuing airworthiness and the serviceability of both operational and emergency equipment shall be ensured by CO3 [K₁]
- | | |
|---|--------------------------|
| a) Accomplishment of pre-flight inspections | b) Defect recording data |
| c) Revision program | d) Investigation |
7. Ascend the sequence of the of the Quality control Members. CO4 [K₁]
- | | |
|---------------------|-------------------------|
| 1. Quality Manager | 3. Dy. Quality Manger |
| 2. Chief Instructor | 4. Dy. Chief Instructor |
| a) 2-3-4-1 | b) 1-3-2-4 |
| c) 3-4-2-1 | d) 4-2-3-1 |
8. Which is the maintenance process for locating and resolving problem areas through analytical study of "malfunctions" or "failure", not affecting safety of aircraft? CO4 [K₁]
- | | |
|---------------------------|-----------------------------|
| a) Condition monitoring | b) On condition maintenance |
| c) Preventive maintenance | d) Overhauling |

9. Assertion (A): First-aid kit containing such items which can be used for the purpose of first-aid treatment of injuries which may occur in flight or as a result of minor accidents. CO5 [K₂]
Reason (R): As per the instruction given by the DGCA, there are 3 medical kits to be carried for a passenger capacity of 101-200.
- a) Both A and R are Individually true and R is the correct requirement of A b) Both A and R are Individually true but R is not the exact requirement of A
c) A is true but R is false d) A is false but R is true
10. _____ is a collection of business processes focused on consistently meeting customer requirements and enhancing their satisfaction. CO5 [K₁]
- a) AVS b) QMS
c) TBO d) AME License

PART B (10 x 2 = 20 Marks)
(Answer not more than 40 words)

11. Define “MEL” CO1 [K₁]
12. What is Airworthiness directive? CO1 [K₂]
13. Explain Critical Shut Down. CO2 [K₂]
14. Differentiate Parent Base and Line Station. CO3 [K₂]
15. Write the two categories of aircraft registration in India. CO3 [K₁]
16. What is continued airworthiness? CO4 [K₃]
17. How light and heavy aircrafts are differentiated by AUW? CO2 [K₂]
18. Write the experience requirement for License category R. CO4 [K₁]
19. Define concession. CO5 [K₁]
20. Distinguish between First aid kit and Physician kit. CO5 [K₂]

Answer any FIVE Questions:-

PART C (5 x 14 = 70 Marks)
(Answer not more than 300 words)

Q.No. 21 is Compulsory

21. After continued testing of equipment by OEM, it shows deficiency and leads to failure of equipment which is already installed and flew in aircraft models for years. Write the procedure which makes the aircraft model airworthy. CO3 [K₂]

- | | | |
|--|-----|-------------------|
| 22. Explain the airworthiness regulations related to engineering activities of operators. | CO1 | [K ₂] |
| 23. How will you conduct the analytical study of in-flight readings and recordings? | CO3 | [K ₃] |
| 24. List out the requirements for issue of AME license in category A and C. | CO4 | [K ₃] |
| 25. Describe about the maintenance of fuel and on-condition maintenance. | CO1 | [K ₂] |
| 26. List down the procedure for issue / revalidation of type certificate of aircraft and its engine / propeller. | CO2 | [K ₃] |
| 27. Enumerate the documents to be carried on board by Indian registered aircrafts of the following groups. | CO5 | [K ₂] |
| i. Documents required under group A | | |
| ii. Documents required under group B | | |
