Sanjay Ghodawat University, Kolhapur

2020-21

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

EXM/P/09/00

Year and Program: Final Year & BTech	**School of Technology**	**Department: Aeronautical Engineering**
Course Code: AET407C	**Course Title: Aircraft Condition Monitoring**	**Semester : VII**
Day :Saturday Date:26.12.2020	**End Semester Examination**	**Time:2 Hrs. Max Marks:50**

Instructions: 1) All questions are compulsory.

		Marks	Bloom's Level	CO
Q.1	**Answer the following (any two)**–			
a)	You are an aircraft maintenance engineer who is delegated the task to carry out maintenance work for your client's aircraft. Explain in brief how you will categorize this maintenance into different types.	8	L_3	CO1
b)	There are a wide range of Non-Destructive Testing (NDT) techniques available,each with associated advantages and disadvantages. Consider the followingtwo scenarios and suggest an appropriate NDT technique for each scenario,giving reasons for your choice: (i) To check the temperature distribution in faulty machines, (ii) To check for defects in structural parts by employing sound waves at frequency above human hearing limits.	8	L_4	CO2
c)	Explain the causes for ageing of the transformers that you can supposed to maintain.	8	L_3	CO2
Q.2	**Answer the following (any two) –**			
a)	Explain themechanisms of wear that occur due to mating machine components.	8	L_2	CO3
b)	Vibration is a major problem that can compromise an aircraft structure. Investigate and report what kind of shaker instrumentations you will employed in testing vibrations for an aircraft.	8	L_4	CO4
c)	Explain reliability analysis for aircraft structure in detail.	8	L_2	CO4
Q.3	**Answer the following (any two) –**			

a)	Explain the Expert System for condition monitoring that is necessary for gas turbine functionality.	9	L_2	CO5
b)	In your attempt to understand and monitor condition of combustion, what parameters would you use to know about combustion monitoring?	9	L_4	CO5
c)	Frequency spectrum monitoring is a part of vibration monitoring that utilized in aviation sector. Briefly discuss how this monitoring works and why is it essential for efficient working of whole aircraft?	9	L_3	CO6

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