PRN:		Course Code :	AER4704C

Fourth Year **B. Tech** End Semester Examination Winter 2023

Aircraft Condition Monitoring

Day and Date: Tuesday, 05/12/2023 Max Marks: **100**

Time : 2.00 to 5.00 PM Duration: **03** hrs

Instructions: All questions are compulsory.

			Marks	Bloom's Level	CO
Q.1		**Attempt the following**			
	a)	Explain different objectives of maintenance Planning	08	L1	1
	b)	State and explain following terms in detail A. Mean Time to Failure B. Mean Time Between failure	08	L2	1
		OR			
	b)	State and explain A. Preventive Maintenance B. Predictive Maintenance	08	L2	1
Q.2		**Attempt the following**			
	a)	Explain Polarization Index and Dielectric Absorption Ratio testing methods in detail.	08	L1	1
	b)	Explain the different causes of Insulation Failure	08	L3	1
		OR			
	b)	Elaborate maintenance of Transformer in detail	08	L3	1
Q.3		**Attempt any two from the following**			
	a)	Explain in detail different steps involved in condition monitoring	08	L1	2
	b)	Explain with suitable diagrams cost comparison with and without condition monitoring	08	L2	2
	c)	Elaborate ON Line and OFF Line Load testing	08	L2	2

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Q.4 **Attempt any two from the following.**

a)	Elaborate with suitable diagrams Motor Current Signature Analysis (MCSA)	08	L3	3
b)	Define following terms in case of condition monitoring 1. Failure, 2. Failure Mechanism, 3. Root Cause Analysis (RCA), 4. Duration of Failure Sequence,	08	L3	3
c)	Elaborate Failure modes and root causes in rotating Electrical Machines.	08	L3	3

Q.5 **Attempt any Two from the following**

a)	Explain the importance of temperature measurement. Elaborate different approaches of temperature measurement.	09	L3	4
b)	Explain Particulate Detection by Chemical Analysis in detail	09	L3	4
c)	Explain wear Debris detection in detail	09	L3	4

Q.6 **Attempt any Two from the following**

a)	Explain different applications of Vibration Analysis	09	L2	5
b)	Explain with suitable diagram Seismic Instrument for measurement of vibration parameters	09	L2	5
c)	What is Fast Fourier Transformer (FFT)? State its applications	09	L2	5

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