BE-MECH | R19] Sem-VII / ATKT / FH23/ 22/06/2023

Time: 3 hour

Max Marks: 80

Q.p. Code: 31785

Note: 1. Q1 is compulsory
2. Solve any three from remaining

Q1   Solve any Four out of Six   20
A. Write a short note on health monitoring of industrial pumps.
B. Describe the different applications of Laser Doppler vibrometry (LDV).
C. Explain the Unique reasons for mechanical looseness.
D. Discuss the importance of continuous pump vibration monitoring.
E. Explain the essential settings in the Data Acquisition System (DAS).
F. Explain the benefits of Vibration based condition monitoring?

Q2
A. What is Fast Fourier Transform (FFT)? What are its applications, advantages   10
and disadvantages?
B. Explain the methods to diagnose the vibrations due to bearing faults? Also   10
explain the vibration generated by defective rolling bearings.

Q3
A. Explain the main methods used for attaching sensors to monitoring locations   10
in predictive maintenance.
B. What are the methods for shaft alignment and how do you diagnose a   10
misalignment situation?

Q4
A. What are the unique vibration characteristics for faults in gearboxes?   10
B. What are different faults associated with rolling element bearing? What are   10
their unique vibration characteristics?

Q5
A. What are the challenges that need to be addressed by the vibration   10
monitoring system in sugar mills?
B. Explain the four classes of fourier transforms with graphs.   10

Q6
A. Explain vibration-based condition monitoring and fault diagnosis in rotating   10
machines.
B. Explain the importance of signal conditioning with examples.   10

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