Sanjay Ghodawat University, Kolhapur

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

2020-21

EXM/P/09/00

Year and Program: 2020-21 T Y B Tech	**School of Technology**	**Department: Mechanical**
Course Code: MET 3081	**Course Title: Mechanical Vibrations**	**Semester :VI**
Day and Date:	**End Semester Examination**	**Time : 2 Hrs.** **Max Marks : 50**

Instructions: 1) All Questions are compulsory.

Q.1	**Answer the Following (Any Two)**–	**Marks**	**Bloom's Level**	**CO**
a)	Find out natural frequency of the system as shown in Fig. 1. Assume MI of combined pulley as I.	8	L1	308.1.2

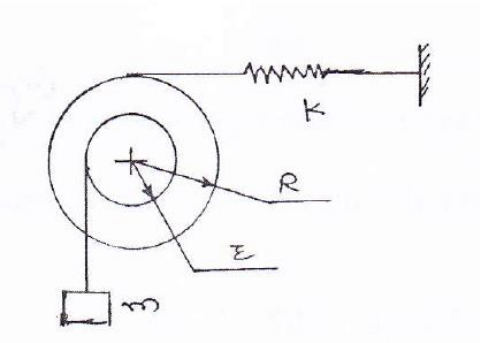


Fig. 1

b)	A vibrating system is defined by following parameters; m=5 kg, k=150 N/m and c= 3 N-s/m Determine i) The damping factor ii) The natural frequency of Damped vibrations iii) The logarithmic decrement iv) The ratio of two consecutive amplitudes	8	L1	308.1.1
c)	What are the different causes of vibrations in machines? What are the effects of vibration?	8	L1	308.1.1

Q.2 **Answer the Following (Any two)** –

a) A system is as shown in Fig 2.Assume m_1=2 kg, m_2= 1 kg, k_1=20 N/m^2 and k_2=10 N/m^2 Determine two natural frequencies. 8 L3 308.1.3

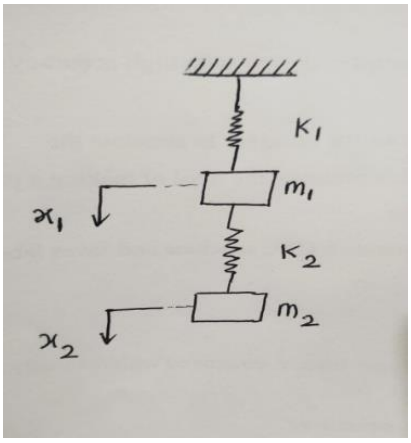


Fig. 2

b) What is vibration absorber? Explain with suitable example. 8 L3 308.1.3

c) Explain stiffness influence coefficient matrix with suitable example. 8 L3 308.1.3

Q.3 **Answer the Following (Any two)** –

a) What are steps involved in vibration conditioning monitoring? How the vibration monitoring helps to carry out preventive maintenance of rotating machines. 9 L2 308.1.4

b) Explain construction and working of seismometer using suitable diagram 9 L2 308.1.4

c) What is decibel scale? What is its importance? Explain with suitable example 9 L2 308.1.5

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