Course Code: 20CE1011 **R20**

SIDDHARTH GROUP OF INSTITUTIONS:: PUTTUR
(AUTONOMOUS)
Siddharth Nagar, Narayanavanam Road – 517583

QUESTION BANK (DESCRIPTIVE)

Subject with Code: STRUCTURAL HEALTH MONITORING **Course & Branch**: M.Tech - SE

Year & Sem: I-M.Tech & I-Sem **Regulation:** R20

UNIT –I
STRUCTURAL HEALTH

1	Define Structural Health monitoring and various factors affecting health of the structures.	[L1][CO1]	**[12M]**
2	Brief our scope of maintenance and list out various facts of maintenance.	[L2][CO1]	**[12M]**
3	Define inspection of a structure and list out various stages of inspection.	[L2][CO1]	**[12M]**
4	Explain various factors to be considered repair of concrete structures.	[L1][CO1]	**[12M]**
5	Explain importance of maintenance various aspects of Inspection.	[L1][CO1]	**[12M]**
6	Explain various causes that necessitate the maintenance of a structure.	[L1][CO1]	**[12M]**
7	What are different inspection periods and list out various factors considered for inspection of a building?	[L2][CO1]	**[12M]**
8	Define rehabilitation and list out various steps used in rehabilitation of concrete structures with its applications.	[L2][CO1]	**[12M]**
9	With the help of flow chart explain assessment procedure for evaluating a damaged structure	[L3][CO1]	**[12M]**
10	Brief out various causes of deterioration of a structure.	[L1][CO1]	**[12M]**

Course Code: 20CE1011 **R20**

UNIT –II
STRUCTURAL HEALTH MONITORING & STRUCTURAL AUDIT

1	Define Structural Health monitoring and concept of Structural Health monitoring	[L1][CO2]	**[12M]**
2	Explain various measures of structural health monitoring.	[L2][CO2]	**[12M]**
3	Explain the concept of structural safety in alteration.	[L1][CO2]	**[12M]**
4	What is structural audit and explain purpose of structural audit.	[L1][CO2]	**[12M]**
5	Explain in detail assessment of a health of a structure.	[L1][CO2]	**[12M]**
6	Explain in detail assessment of a health of a structure by NDT's equipment.	[L1][CO2]	**[12M]**
7	List out various NDT methods for testing concrete.	[L2][CO2]	**[12M]**
8	Explain about various non destructive evaluation methods in practice.	[L2][CO2]	**[12M]**
9	Explain about collapse and investigation management of a structure.	[L2][CO2]	**[12M]**
10	What are various procedures involved in structural health monitoring and explain benefits of structural health monitoring.	[L1][CO2]	**[12M]**

Course Code: 20CE1011 **R20**

UNIT –III
STATIC FIELD TESTING

1	Define static field testing and types of static tests.	[L1][CO3]	**[12M]**
2	Explain various loading methods for static tests.	[L2][CO3]	**[12M]**
3	Describe the procedure of behavioral test and its importance.	[L1][CO3]	**[12M]**
4	Explain the procedure of proof test and its importance.	[L1][CO3]	**[12M]**
5	Brief out the concept of static response measurement.	[L1][CO3]	**[12M]**
6	List out various advantages and disadvantages of types of static tests in static field testing.	[L1][CO3]	**[12M]**
7	Explain in detail various strain gauges and their importance in static field testing.	[L1][CO3]	**[12M]**
8	Explain in detail LVDT's and their importance in static field testing.	[L2][CO3]	**[12M]**
9	Explain in detail various dial gauges and their importance in static field testing.	[L2][CO3]	**[12M]**
10	Explain any case study in static field testing.	[L2][CO3]	**[12M]**

Course Code: 20CE1011 **R20**

UNIT –IV
DYNAMIC FIELD TESTING

1	Define dynamic field testing and types of static tests.	[L1][CO4]	**[12M]**
2	Explain stress history data of dynamic field testing.	[L2][CO4]	**[12M]**
3	Explain various dynamic loading allowances test.	[L1][CO4]	**[12M]**
4	Describe the procedure of forced vibration method.	[L2][CO4]	**[12M]**
5	Explain the procedure of ambient vibration and its importance.	[L1][CO4]	**[12M]**
6	Brief out the concept of Dynamic response method.	[L1][CO4]	**[12M]**
7	Explain the procedure of impact hammer testing in dynamic field testing.	[L2][CO4]	**[12M]**
8	Explain the procedure of shaker testing in dynamic field testing.	[L2][CO4]	**[12M]**
9	Describe periodic monitoring for dynamic field testing.	[L3][CO4]	**[12M]**
10	Describe continuous monitoring for dynamic field testing and its importance.	[L1][CO4]	**[12M]**

Course Code: 20CE1011 **R20**

UNIT –V
INTRODUCTION TO REPAIRS AND REHABILITATIONS OF STRUCTURES

1	Explain in detail any structure case study on structural health monitoring.	[L2][CO5]	**[12M]**
2	Explain various types of piezoelectric materials.	[L2][CO5]	**[12M]**
3	List out various advantages and disadvantages of piezoelectric materials	[L1][CO5]	**[12M]**
4	List out various materials used in structural health monitoring.	[L1][CO5]	**[12M]**
5	Describe the procedure of electromagnetic independence technique.	[L2][CO6]	**[12M]**
6	Explain the importance of electromagnetic independence technique in structural health monitoring.	[L2][CO6]	**[12M]**
7	List out various advantages and disadvantages of electromagnetic impedance techniques.	[L1][CO6]	**[12M]**
8	Brief out the concept of sensors and various types of sensors.	[L1][CO5]	**[12M]**
9	Explain in detail sensor technology in structural Health monitoring.	[L2][CO5]	**[12M]**
10	Describe various methods adopted in electromagnetic impedance techniques.	[L2][CO6]	**[12M]**

PREPARED BY
K.ASHA LATHA
Assistant Professor/Civil