

Reg. No. :

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**Question Paper Code:U5517**

M.E. DEGREE EXAMINATION, NOV 2024

Professional Elective

Structural Engineering

21PSE517 – SMART MATERIALS AND SMART STRUCTURES

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Analyze the Feasibility of Smart Materials and Structures and what are the steps involved in Smart city construction? CO1- Ana (20)  
Or  
(b) Analyze the selection and importance of factors involved in construction of smart Structures. CO1- Ana (20)
2. (a) How to implement Resistance & Capacitance in smart structures? CO3- App (20)  
Or  
(b) Examine in detail about Inductance involved in smart Structures. CO3- App (20)
3. (a) Examine in detail Physical Measurement using Piezo Electric Strain measurement in detail. CO2- App (20)  
Or  
(b) Examine in detail about the Inductively Read Transducers with suitable examples? CO2- App (20)
4. (a) Construct a database model for Magneto structure Material. CO2- App (20)  
Or  
(b) Examine in detail about Shape Memory Alloys. CO2- App (20)
5. (a) Design a communication network for a Signal Processing and Control for Smart Structures. CO3-App (20)  
Or  
(b) Examine in detail about Sensors as Geometrical Processors. CO3-App (20)

