



CBCS SCHEME

BETCK105A/BETCKA105

First Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.2024

Smart Materials and System

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

Module - 1			M	L	C
Q.1	a.	What are emerging materials and emerging technologies in material science?	10	L2	CO1
	b.	What is the honey comb in composites? Give an example.	10	L2	CO1
OR					
Q.2	a.	What are nano materials? Give an example of a nano-material? Mention the 4 (four) types of nano-materials. Explain.	10	L2	CO2
	b.	What is an engineering polymer? What are the applications?	10	L2	CO2
Module - 2					
Q.3	a.	Mention the components of prefabricated building? What is the material in building design?	10	L2	CO2
	b.	What is modular coordination in pre-fabrication and different types structural system used?	10	L2	CO3
OR					
Q.4	a.	What are the 4-types of modular construction or structural system? Explain briefly.	10	L2	CO3
	b.	What is the difference between prefabrication and modular construction?	10	L2	CO2
Module - 3					
Q.5	a.	What is the working principle of piezo sensor? How does the piezo electric method work?	10	L2	CO3
	b.	What is the principle behind the piezo-electric material for energy conversion?	10	L2	CO3
OR					
Q.6	a.	What is the strain gauge, what are the method of strain Gauge measurement?	10	L2	CO1
	b.	Mention the three types of strain gauge explain.	10	L2	CO4
Module - 4					
Q.7	a.	What is difference between BIM and BMS?	10	L2	CO1
	b.	What is function of integrated building system, what are the benefits?	10	L2	CO4

OR					
Q.8	a.	What are the advantages of BIM and IBMS?	10	L2	CO4
	b.	Explain the major goals of integrated management system.	10	L2	CO4
Module – 5					
Q.9	a.	Describe the importance of 3D printing and explain.	10	L2	CO5
	b.	What are the advantages of 3D printing buildings?	10	L2	CO5
OR					
Q.10	a.	Mention the four terminology in 3D printing and write 4-steps of 3D printing.	10	L2	CO5
	b.	Explain the most common types of 3-D printing. Explain with neat sketch any one.	10	L2	CO5
