

CBCS SCHEME

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BETCK205A/BETCKA205

**Second Semester B.E./B.Tech. Degree Supplementary Examination,
June/July 2024**

Smart Materials and Systems

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.	With a neat sketch explain Honey comb structure carbon composites.	10	L2	CO1
	b.	Write a note on Nano Materials and Engineered Polymers.	10	L3	CO1
OR					
Q.2	a.	Explain the below sustainable byproduct : i) Fly ash ii) GGBS	10	L3	CO1
	b.	Write a note on Construction Chemicals.	10	L2	CO1
Module – 2					
Q.3	a.	What are prefabricated building components? Briefly explain.	10	L1	CO2
	b.	Write a note Modular coordination in prefabricated building components.	10	L4	CO2
OR					
Q.4	a.	Illustrate standardization in prefabricated building components.	10	L3	CO2
	b.	Write a note on : i) Materials of prefabricated components ii) Transportation and Installation.	10	L1	CO2
Module – 3					
Q.5	a.	Define Piezoelectricity. Briefly explain the principle of piezoelectricity.	10	L3	CO3
	b.	Write a note on Polymers and Ceramics.	10	L1	CO3
OR					
Q.6	a.	With a neat sketch explain piezoelectric sensor.	10	L4	CO3
	b.	Write a note on : i) in-plane and out of plane sensor ii) accelerometer	10	L3	CO3
Module – 4					
Q.7	a.	What is BIM? Explain its necessity and advantages.	10	L4	CO4
	b.	Briefly explain BIM in building design.	10	L2	CO4
OR					
Q.8	a.	What is IBMS? Explain its necessity?	10	L1	CO4
	b.	List and explain types of IBMS. Write their advantages.	10	L3	CO4
Module – 5					
Q.9	a.	Write the importance of 3D printing? Explain its historical development.	10	L2	CO5
	b.	With a flow chart, explain process chain of 3D printing.	10	L4	CO5
OR					
Q.10	a.	With a neat sketch explain SLA 3D printing process.	10	L1	CO5
	b.	List and explain the applications of 3D printing.	10	L4	CO5
