CBCS SCHEME

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BETCK105A/BETCKA105

First 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.	What is the honeycomb structure in composite materials, and what is the structure of honey comb made of.	10	L1	CO1
	b.	What do you mean by nanomaterials? What are examples of nanomaterials?	10	L1	CO1
		OR			
Q.2	a.	Define an engineered polymers and what polymer are used in engineering.	10	L1	CO3
	b.	Explain the sustainability of CGBS, flyash in CGBS?	10	L2	CO3
		Module – 2			
Q.3	a.	Explain prefabricated building system and components, most common type of prefabrication.	10	L2	CO2
	b.	What are the classification of prefabrication? And write the benefits of prefabrications?	10	L2	CO2
		OR			
Q.4	a.	Explain two main types of prefabrication and its applications.	10	L2	CO3
	b.	Explain the modular coordination, reference system in construction.	10	L2	CO4
		Module – 3			
Q.5	a.	What is meant by smart materials? Define a material as being smart.	10	L2	CO3
	b.	What is the working principle of piezoelectric sensor, transduction.	10	L1	CO1
		OR			
Q.6	a.	Explain the piezoelectric sensor and piezoelectric principle and its uses.	10	L2	CO3
	b.	What are the advantages of piezoelectric sensor and also the disadvantages.	10	L2	CO3
		Module – 4			
Q.7	a.	Explain Building Information. What are the 4-stages of BIM?	10	L2	CO4
	b.	What are advantages and benefits of BIM cost?	10	L2	CO4
		OR			
Q.8	a.	What do you mean by IBMS? And explain benefits of IBMS.	10	L2	CO4
	b.	What is the purpose of IBMS? What is IBMS strategy?	10	L1	CO4

		Module – 5			
Q.9	**a.**	What is the main idea of 3D printing? What are the advantages?	**10**	**L1**	**CO5**
	b.	What is the term of 3D printing and concept of 3D printing?	**10**	**L3**	**CO5**
		OR			
Q.10	**a.**	What is meant by 3D modeling? What are the basics of 3D modeling?	**10**	**L4**	**CO5**
	b.	What are the four main methods of 3D modeling? Explain any one.	**10**	**L3**	**CO5**

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