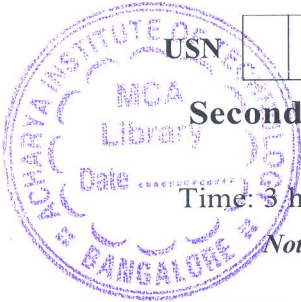


# CBCS SCHEME

BETCK205A/BETCKA205



USN

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Second Semester B.E./B.Tech. Degree Examination, Dec.2023/Jan.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.	Explain the honey comb structure and mention the advantages.	10	L2	CO1
	b.	What is nano-material with neat sketch, explain Top Down approach of nano-materials synthesis.	10	L2	CO1
<b>OR</b>					
Q.2	a.	Define polymerization. Explain types of polymers with examples.	10	L2	CO1
	b.	Describe : i) Fly ash ii) GGBS.	10	L2	CO1
<b>Module – 2</b>					
Q.3	a.	Make a list of prefabricated building components of explain them.	10	L2	CO2
	b.	Overview systems of prefabrication and list the characteristics to be considered in devising a system.	10	L2	CO2
<b>OR</b>					
Q.4	a.	Explain : i) Standardization ii) Modular coordination.	10	L2	CO2
	b.	Explain the transportation and installation of building components.	10	L2	CO2
<b>Module – 3</b>					
Q.5	a.	Define piezo-electric and explain the piezoelectric sensor with neat figure.	10	L2	CO3
	b.	What is ceramics? List and explain the various properties of ceramics.	10	L2	CO3
<b>OR</b>					
Q.6	a.	Define : i) Thermosetting ii) Thermoplastic iii) Elastomers	10	L2	CO3
	b.	Explain the term shear sensor and mention their properties. List the advantages of shear sensor.	10	L2	CO3
<b>Module – 4</b>					
Q.7	a.	In BIM decision factors, explain purpose of model.	10	L2	CO4
	b.	Explain BIM and list advantages.	10	L2	CO4
<b>OR</b>					
Q.8	a.	Explain IBMS and its necessity.	10	L2	CO4
	b.	Outline the types and advantages of IBMS.	10	L2	CO4

Module – 5					
Q.9	a.	Define 3-D printing. Explain the importance of the 3-D printing.	10	L2	CO5
	b.	Describe the process chain in 3D printing.	10	L2	CO5
OR					
Q.10	a.	List and explain post processing methods.	10	L2	CO5
	b.	Summarize the advantages and classification of 3D printing.	10	L2	CO5

\*\*\*\*\*