



**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY  
(AUTONOMOUS)**

(Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu)  
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**QUESTION BANK (DESCRIPTIVE)**

**Subject with Code : ENGINEERING MATERIALS(20CE0101)**

**Course & Branch : B. Tech -CE**

**Year & Semester : I - B. Tech. & I - Semester**

**Regulation : R20**

**UNIT –I  
STONES, BRICKS AND TILES**

<b>1</b>	Briefly explain the classification of rocks.	[L2][CO1]	[12M]
<b>2</b>	What is meant by rock cycle? How does it represent the sequence of formation of the three important types of rocks?	[L1][CO1]	[12M]
<b>3</b>	Write short notes on, i) Quarrying of stones. ii) Precautions in blasting.	[L2][CO1] [L3][CO1]	[6M] [6M]
<b>4</b>	i) List the characteristics of good building stones. ii) Write the uses of stones.	[L2][CO1] [L1][CO1]	[6M] [6M]
<b>5</b>	What are the substances which harm the qualities of good bricks, in their manufacture? Explain any five substance.	[L3][CO2]	[12M]
<b>6</b>	Describe how bricks are classified.	[L1][CO2]	[12M]
<b>7</b>	What are the constituents of good brick earth? Explain shortly.	[L2][CO2]	[12M]
<b>8</b>	Briefly explain the process involved in the manufacturing of bricks.	[L3][CO2]	[12M]
<b>9</b>	i) Write short notes on "Defects in clay bricks". ii) What are the characteristics of good bricks?	[L2][CO2] [L3][CO2]	[6M] [6M]
<b>10</b>	Write short notes on: i) Types of tiles and their uses. ii) Characteristics of good tiles.	[L1][CO2] [L2][CO2]	[6M] [6M]

**UNIT –II**  
**CEMENT, MORTAR AND CONCRETE**

<b>1</b>	A) What are the ingredients of Portland cement? State the functions and limits of each of them.	[L1][CO3]	[6M]
	B) What tests would you specify to ensure if the cement supplied at the site is of good quality?	[L3][CO3]	[6M]
<b>2</b>	Describe with flow diagrams the dry and wet process of manufacture of cement.	[L1][CO3]	[12M]
<b>3</b>	A) What are the initial and final setting times of cement? What are all their importance?	[L2][CO3]	[6M]
	B) List the precautions should be taken while storing cement?	[L3][CO3]	[6M]
<b>4</b>	What is mortar? Briefly describe the various types of mortars.	[L1][CO3]	[12M]
<b>5</b>	A) State the functions of ingredients in mortar.	[L2][CO3]	[6M]
	B) List the characteristics of good mortar.	[L3][CO3]	[6M]
<b>6</b>	Describe briefly the method of preparing lime mortar.	[L1][CO3]	[12M]
<b>7</b>	A) What is curing of concrete and how is it made?	[L2][CO3]	[6M]
	B) What are all the significance curing of concrete?	[L2][CO3]	[6M]
<b>8</b>	A) Define water-cement ratio. How does it influence concrete strength?	[L2][CO3]	[6M]
	B) Explain the factors influencing the strength of concrete.	[L2][CO3]	[6M]
<b>9</b>	What is meant by workability of concrete? How is it tested in field and in laboratory?	[L4][CO3]	[12M]
<b>10</b>	Write short notes on:		
	i) Compression Strength of Concrete.	[L3][CO3]	[6M]
	ii) Tensile Strength of Concrete.	[L3][CO3]	[6M]

**UNIT –III**  
**WOOD, TIMBER AND PAINT**

<b>1</b>	(i) Distinguish between softwood and hard wood.	[L2][CO4]	[6M]
	(ii) Explain the classification of trees.	[L1][CO4]	[6M]
<b>2</b>	List the various forms of wood products and their characteristics.	[L1][CO4]	[12M]
<b>3</b>	i) Differentiate between exogenous and endogenous trees	[L2][CO4]	[6M]
	ii) List the properties of wood and shortly write about any three properties.	[L1][CO4]	[6M]
<b>4</b>	i) State the principle causes of decaying of timber.	[L1][CO4]	[6M]
	ii) What are dry and wet rots? How are they caused and prevented?	[L3][CO4]	[6M]
<b>5</b>	Discuss the reasons for the defects in painting work.	[L2][CO4]	[12M]
<b>6</b>	i) What is seasoning of timbers? Mention it's significances.	[L2][CO4]	[6M]
	ii) Describe various defects in timber.	[L1][CO4]	[6M]
<b>7</b>	i) State the characteristics of good timber.	[L3][CO4]	[6M]
	ii) Explain the damages caused by insects on wood.	[L2][CO4]	[6M]
<b>8</b>	i) Explain the procedure to prepare the oil paint.	[L3][CO4]	[6M]
	ii) What are the various ingredients of paints? State the functions of each of them.	[L1][CO4]	[6M]
<b>9</b>	Describe in details the types of defects in paint works.	[L1][CO4]	[12M]
<b>10</b>	i) What are the differences between paints, varnishes and distemper?	[L2][CO4]	[6M]
	ii) Classify different types of varnishes and briefly describe them.	[L1][CO4]	[6M]

**UNIT –IV**  
**METALLIC PRODUCTS, NON-METALLIC PRODUCTS AND SMART MATERIALS**

<b>1</b>	What is cast iron? Write its properties in detail.	[L1][CO5]	[12M]
<b>2</b>	Specify some important uses of cast iron, wrought iron and mild steel.	[L1][CO5]	[12M]
<b>3</b>	Describe in detail about the reinforcing steel used in reinforced cement concrete.	[L2][CO5]	[12M]
<b>4</b>	Describe in detail about testing of tensile steel.	[L3][CO5]	[12M]
<b>5</b>	Write a detailed notes on rolled steel sections.	[L1][CO5]	[12M]
<b>6</b>	Explain any five rolled steel sections with neat sketches.	[L2][CO5]	[12M]
<b>7</b>	Write short notes on (i) Iron (ii) Pig iron.	[L2][CO5] [L2][CO5]	[6M] [6M]
<b>8</b>	Explain briefly about (i) Aluminum. (ii) Copper.	[L2][CO5] [L2][CO5]	[6M] [6M]
<b>9</b>	What are smart materials? Explain their applications in Civil Engineering field.	[L3][CO5]	[12M]
<b>10</b>	Write short notes on i) Piezoelectric materials (ii) Magneto Rheostatic fluid.	[L3][CO5]	[12M]

**UNIT –V**  
**BITUMEN AND AGGREGATES**

<b>1</b>	Define bitumen, asphalt and tar and how do they differ.	[L2][CO6]	[12M]
<b>2</b>	What are the various types of bitumen? Write in detail about their uses.	[L1][CO6]	[12M]
<b>3</b>	Explain the procedure involved in ductility test.	[L3][CO6]	[12M]
<b>4</b>	Describe the penetration test on bitumen.	[L3][CO6]	[12M]
<b>5</b>	Explain the following tests for bitumen (i) Flash point and Fire point test (ii) Softening point test.	[L3][CO5] [L3][CO5]	[6M] [6M]
<b>6</b>	What is meant by aggregates? Briefly describe their classification.	[L1][CO6]	[12M]
<b>7</b>	Discuss the characteristics of good aggregates.	[L3][CO6]	[12M]
<b>8</b>	Explain the procedure involved in specific gravity test on coarse aggregates.	[L2][CO6]	[12M]
<b>9</b>	With significance briefly explain about crushing test and impact test on coarse aggregates.	[L3][CO6]	[12M]
<b>10</b>	Explain mechanical properties of coarse aggregates.	[L2][CO6]	[12M]

**Prepared by:**  
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