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Question Paper Code: ACEB02



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

MODEL QUESTION PAPER-II

B.Tech III Semester End Examinations, November - 2019

Regulations: R18

BUILDING MATERIALS, CONSTRUCTION AND PLANNING

(Civil Engineering)

Time: 3 hours

Max. Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

MODULE – I

1. a) Write the various methods of quarrying of stones. Explain each method briefly. [7M]
b) Elaborate the following [7M]
 - a) Tests on the aggregates
 - b) Measurement of moisture content of aggregates

2. a) Write Short notes on: [7M]
 - i. Sieve analysis
 - ii. Specific gravity
 - iii. Bulking
 - iv. Moisture content
b) Discuss the classification of bricks and explain about their qualities, special types of bricks? [7M]

MODULE – II

3. a) Describe in briefly any type of manufacture of cement with the help of flow diagram? [7M]
b) Explain the field tests on cement? Write the chemical composition of ordinary Portland cement. [7M]

4. a) What is meant by workability of concrete? Mention different tests conducted on workability of concrete. [7M]
b) Explain about special purpose of cements of the following. [7M]
 - a) Rapid hardening Portland cement.
 - b) Low heat Portland cement.

MODULE – III

5. a) What are the different types of arches that are used for engineering construction? Describe any three types in detail with sketches. [7M]
- b) Write short note on: [7M]
- i. Cement concrete floor
 - ii. Terrazzo floor
 - iii. 3. Mosaic floor
6. a) List the different types of foundations, Explain shallow foundations. [7M]
- b) Sketch and explain about strap and mat footing. [7M]

MODULE – IV

7. a) What is brick masonry? State and explain briefly the various classifications of brick masonry? [7M]
- b) Explain the process of manufacturing of Glass? What are the Uses of glass in construction industry? [7M]
8. a) Define seasoning of timber. What are the objects of seasoning of timber? [7M]
- b) Explain in detail about Classifications of bonds in bricks with neat sketches? [7M]

MODULE – V

9. a) Elaborate the Half turn stairs and Continuous stairs with neat sketches. [7M]
- b) Distinguish between quarter turn stairs and bifurcated stair? [7M]
10. a) Classify the different types of buildings according to NBC? [7M]
- b) What are the factors to be considered while selecting site for any building construction? [7M]



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COURSE OBJECTIVES:

The course should enable the students to:

I	Develop knowledge of material science and behaviour of various building materials used in construction.
II	Identify the construction materials required for the assigned work.
III	Provide procedural knowledge of the simple testing methods of cement, lime and concrete etc.
IV	List the requirements and different types of stairs.

COURSE OUTCOMES (COs):

CO 1	Understand the types, properties of stones, manufacturing process of bricks, types of bricks and aggregates.
CO 2	Describe the different types of cements, admixtures, manufacturing process, properties of cement, ingredients of cement concrete and tests conducted on concrete.
CO 3	Identify the components of building, types of foundations and differentiate types of materials depending on its function.
CO 4	Describe the properties of wood, aluminium, glass and different types of wood, masonry used in buildings.
CO 5	Explain principles of building planning, building by laws, classification of buildings and stairs.

COURSE LEARNING OUTCOMES (CLOs):

ACEB02.01	Predict the properties of building stones and its classifications.
ACEB02.02	Understand the concept of various methods of manufacture of bricks.
ACEB02.03	Identify rock using basic geological classification systems
ACEB02.04	Differentiate the fine aggregates and coarse aggregates under various views.
ACEB02.05	Explain various types of cements and their applications in construction. Various field and laboratory tests on cement.
ACEB02.06	Analyze the importance of mineral and chemical admixtures, requirements of the concrete in construction.
ACEB02.07	Explain different types of lintel, arches and the materials which are commonly used for construction.
ACEB02.08	Explain the suitability of floors in buildings like mosaic flooring, terrazzo flooring, rubber flooring, asphalt flooring.
ACEB02.09	Understand the different types of trusses, RCC roofs, madras terrace/shell roofs.
ACEB02.10	Explain the foundations and uses of different types of foundations.
ACEB02.11	Develop the building walls and foundations how they will help for buildings and details to precise the type of Footings.

ACEB02.12	Explain the classification of various types of woods. State the properties, seasoning of Timber.
ACEB02.13	Understand the Types of properties of wood, aluminium and manufacture of glass.
ACEB02.14	Differentiate the uses of Galvanized iron, fiber-reinforcement plastics, steel and aluminium in construction.
ACEB02.15	Understand masonry, English and flemish bonds. finishing plastering painting and know about building services.
ACEB02.16	Explain Geometrical design of RCC doglegged and open-well stairs. Classification of staircase and technical terms and types of stairs.
ACEB02.17	Principle of building planning and by laws and standards of building material Components and orientation of the building.
ACEB02.18	Possess the knowledge and skills for employability and to succeed in national and international level competitive examinations.
ACEB02.19	Understand the requirements of good stairs.
ACEB02.20	Design RCC doglegged and open-well stairs.

MAPPING OF SEMESTER END EXAMINATION - COURSE OUTCOMES

SEE Question No		Course Learning Outcomes	Course Outcomes	Blooms Taxonomy Level	
1	a	ACEB02.01	Predict the properties of building stones and its classifications.	CO 1	Remember
	b	ACEB02.04	Differentiate the fine aggregates and coarse aggregates under various views.	CO 1	Remember
2	a	ACEB02.04	Differentiate the fine aggregates and coarse aggregates under various views.	CO 1	Remember
	b	ACEB02.02	Understand the concept of various methods of manufacture of bricks.	CO 1	Understand
3	a	ACEB02.05	Explain various types of cements and their applications in construction. Various field and laboratory tests on cement.	CO 2	Remember
	b	ACEB02.05	Explain various types of cements and their applications in construction. Various field and laboratory tests on cement.	CO 2	Understand
4	a	ACEB02.06	Analyze the importance of mineral and chemical admixtures, requirements of the concrete in construction.	CO 2	Understand
	b	ACEB02.05	Explain various types of cements and their applications in construction. Various field and laboratory tests on cement.	CO 2	Understand
5	a	ACEB02.07	Explain different types of lintel, arches and the materials which are commonly used for construction.	CO 2	Remember
	b	ACEB02.08	Explain the suitability of floors in buildings like mosaic flooring, terrazzo flooring, rubber flooring, asphalt flooring.	CO 2	Remember
6	a	ACEB02.10	Explain the foundations and uses of different types of foundations.	CO 3	Understand
	b	ACEB02.11	Develop the building walls and foundations how they will help for buildings and details to precise the type of Footings.	CO 3	Understand
7	a	ACEB02.15	Understand masonry, English and flemish bonds. finishing plastering painting and know about building services.	CO 4	Remember

	b	ACEB02.13	Understand the Types of properties of wood, aluminium and manufacture of glass.	CO 4	Remember
8	a	ACEB02.12	Explain the classification of various types of woods. State the properties, seasoning of Timber.	CO 3	Understand
	b	ACEB02.15	Understand masonry, English and flemish bonds. finishing plastering painting and know about building services.	CO 4	Remember
9	a	ACEB02.16	Explain Geometrical design of RCC doglegged and open-well stairs. Classification of staircase and technical terms and types of stairs.	CO 4	Remember
	b	ACEB02.16	Explain Geometrical design of RCC doglegged and open-well stairs. Classification of staircase and technical terms and types of stairs.	CO 4	Remember
10	a	ACEB02.17	Principle of building planning and by laws and standards of building material Components and orientation of the building.	CO 5	Understand
	b	ACEB02.17	Principle of building planning and by laws and standards of building material Components and orientation of the building.	CO 5	Understand

Signature of Course Coordinator

HOD, CE