

3RD SEM./CIVIL./ 2024(W)

TH3 Building Materials & Construction Technology

Full Marks: 80

Time- 3 Hrs

**Answer any five Questions including Q No.1& 2.
Figures in the right hand margin indicates marks.**

1. Answer **All** questions. 2 x 10
 - a. What are the geological classification of rocks?
 - b. What are the functions of alumina and silica in brick earth?
 - c. Name the compounds formed during the setting action of cement.
 - d. What is the effect of increasing the water-cement ratio on strength of concrete?
 - e. What is bulking of sand?
 - f. What is seasoning of timber?
 - g. As per National Building Code of India, buildings are classified into how many groups as per occupancy? Name any four.
 - h. Differentiate between shallow and deep foundation.
 - i. Differentiate between English bond and Flemish bond.
 - j. Define these two terms;
 - a) Baluster
 - b) D.P.C.
2. Answer **Any Six** Questions. 5 x 6
 - a. State the qualities of good bricks .
 - b. Define workability. Explain the Slump Test in details.
 - c. Mention the qualities of good timber.
 - d. Classify pile foundation and write briefly.
 - e. Explain different types of staircase.
 - f. What are the aims of Energy Management in buildings?
 - g. What are the methods of damp proofing, elaborate briefly ?

Answer **Any Three** Questions.

 3. Briefly explain the steps involved in the manufacture of ordinary Portland cement with a neat flow diagram. 10
 4. What are the various ingredients of paints? State the functions of each of them. 10
 5. Briefly explain the process of manufacture of bricks in details. 10
 6. Name various types of Doors. Describe any two types of doors with neat sketches. 10
 7. What is green building ? Explain in details the features or principles of Green Building. 10

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
 - a. Which type of geological rock is formed by the solidification of magma below the earth's surface?
 - b. Which part of the brick act as a shear key against horizontal load when filled with mortar?
 - c. What is workability of concrete?
 - d. Name the properties developed by reducing the moisture content of timber.
 - e. What are the constituents of varnish?
 - f. Write the objectives of site investigation.
 - g. What are the classification of building based on occupancy (any four)?
 - h. What is the purpose of foundation?
 - i. What do you mean by three quarter bat?
 - j. What is meant by ventilators?
2. Answer **Any Six** Questions 6 x 5
 - a. Explain the characteristics of good building stone.
 - b. State the function of constituent parts of paints.
 - c. Classify and explain piles based on materials.
 - d. Mention the types of doors used in building and explain any two types with neat sketch.
 - e. Write down the types of turning stairs and explain any two turning stairs with sketch.
 - f. Explain the method of constructing cement concrete flooring.
 - g. What do you mean by green building? Describe different types of energy audit in a building.
3. Explain different operations involved in the brick manufacturing process. 10
4. Explain different ingredients and their function in cement. Also mention different types of cements available as per grade of cement. 10
5. Explain different methods adopted for seasoning of timber. 10
6. Explain different types of rubble masonry with figure. 10
7. Explain different types of plaster finishes. 10

3RD SEM./ CIVIL/ 2022(W)

Th-3 Building Materials & Construction Technology

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1 & 2.
Figures in the right hand margin indicates marks.

1. Answer **All** questions. 2 x 10
 - a. What are the geological classification of rocks ? Give some examples of sedimentary rocks.
 - b. What are the functions of alumina and silica in brick earth ?
 - c. Name the compounds formed during the setting action of cement. Mention the name of the compound to react with water at the earliest, when water is added with cement.
 - d. Define water-cement ratio ? What is the effect of increasing the water-cement ratio on strength of concrete ?
 - e. What is bulking of sand ?
 - f. What is seasoning of timber ?
 - g. As per National Building Code of India, buildings are classified into how many groups as per occupancy ? Name any four.
 - h. What are the objectives of providing foundations for structures ?
 - i. Differentiate between English bond and Flemish bond.
 - j. Define these two terms;
 - a) Baluster
 - b) D.P.C.
2. Answer **Any Six** Questions. 6 x 5
 - a. State the qualities of good bricks .
 - b. Define workability. Explain the Slump Test in details.
 - c. Mention the qualities of good timber.
 - d. Explain cast in situ terrazzo flooring.
 - e. Explain different types of staircase.
 - f. What are the aims of Energy Management in buildings?
 - g. What are the principles of damp proofing ?
3. Briefly explain the steps involved in the manufacture of ordinary Portland cement with a neat flow diagram. 10
4. What are the various ingredients of paints? State the functions of each of them. 10
5. Briefly explain the process of manufacture of bricks in details. 10
6. Name various types of Doors. Describe any two types of doors with neat sketches. 10
7. What is green building ? Explain in details the features or principles of Green Building. 10

3rd Sem./ Civil Engg./ 2021(W)
Th3 Building Material & Construction Technology

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right hand margin indicates marks

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|----|---|--------|
| 1. | Answer All questions | 2 x 10 |
| | a. What is the function of alumina and silica in brick earth? | |
| | b. Define water cement ratio. | |
| | c. What is seasoning of timber? | |
| | d. What is the role of solvent in paint? | |
| | e. Differentiate between shallow foundation and deep foundation. | |
| | f. What do you mean by king closer in brick masonry? | |
| | g. What do you mean by throating in stone masonry. | |
| | h. Name different tests used to measure workability of concrete. | |
| | i. Differentiate landing from flight. | |
| | j. What is D.P.C and why it is provided. | |
| 2. | Answer Any Six Questions | 5X6 |
| | a. What do you mean by workability of concrete? Describe the importance of workability on the strength of concrete. | |
| | b. What are the characteristics of a good Timber? | |
| | c. Describe the purpose of use of Arch and lintel in a building. | |
| | d. Explain the characteristics of good building stone. | |
| | e. Classify pile foundation and write briefly. | |
| | f. State the functions of constituent parts of paints. | |
| | g. Why curing is necessary in cement concrete work? | |
| 3 | Classify stair depending on the method of construction. | 10 |
| 4 | Explain different operations involved in the brick manufacturing process. | 10 |
| 5 | Name various types of Doors. Described about any two types of doors with neat sketch. | 10 |
| 6 | Explain different methods of damp proofing treatment. | 10 |
| 7 | Classify building depending on the occupants. | 10 |

III - SEM/CIVIL/2020(W) (NEW)

(Theory - 3)

Full Marks - 80

Time - 3 Hours

Answer any **five** questions including Q. No. 1 & 2.

The figures in the right-hand margin indicate marks.

1. Answer **all** questions : [2 × 10 = 20]

- What is the use of frog in brick ?
- What do you mean by water cement ratio ?
- What is igneous rock ?
- What is seasoning of timber ?
- What is the use of 'vehicle' in a paint ?
- Define foundation.
- What is stretcher and header in a brick masonry ?
- What is D.P.C and why it is provided ?
- Define dog legged stair ?
- Define the term 'Dado' in plastering work ?

2. Answer any six questions. [6 × 5 = 30]

- What are various methods adopted in manufacturing of bricks. Explain kiln burning process.
- Discuss the geological classification of rocks.
- Define and explain workability of concrete.
- State briefly the requirement of good staircase ?
- Draw the plan of alternate course in English bond '1-brick thick wall.'
- Explain the method of constructing cement concrete flooring.
- Describe briefly different methods of damp proofing.

Answer any three. [3 × 10 = 30]

3. Name and explain different ingredients and their function in cement. What are different types of cement available in India where they are used ? [10]

- Explain different types of shallow foundation in detail with neat sketch ? [10]
- Classify with the help of figure various types of windows based on their method of operation or opening ? [10]
- What is green building ? Explain in details the features or principle of green building. [10]
- What are the various ingredients of paints ? State the functions of each of them. [10]

ANSWERS TO 2020(W)

1. (a) What is the use of frog in brick ?

Ans. The depression in the brick on top (approximately 100 mm × 40 mm × 10 to 15 mm deep) is called the frog.

The mortar is filled in the frog while laying the bricks in masonry work to help in bonding and acting as a shear key against horizontal loads.

(b) What do you mean by water cement ratio ?

Ans. The water-cement ratio is the ratio of the weight of water to the weight of cement used in a concrete mix.

A lower ratio leads to higher strength and durability, but may make the mix difficult to work with and form.

Workability can be resolved with the use of plasticizers or super-plasticizers.

(c) What is igneous rock ?

Ans. Igneous rocks (from the Latin word for fire) form when hot, molten rock crystallizes and solidifies.

The melt originates deep within the Earth near active plate boundaries or hot spots, then rises toward the surface.

Igneous rocks are divided into two groups, intrusive or extrusive, depending upon where the molten rock solidifies.

(d) What is seasoning of timber ?

Ans. Seasoning is the process of drying timber to remove the bound moisture contained in walls of the wood cells to produce seasoned timber.

III- SEM CIVIL / 2019(W) / (New)

TH - 3 -BUILDING MATERIALS & CONSTRUCTION TECHNOLOGY

Full Marks: 80

Time : 3 Hours

Answer any **five** Questions including Q.No.1 & 2

Figures in the right hand margin indicates marks

1.	Answer ALL questions (a) Write the size of traditional and modular brick (b) Define shallow and deep foundation. (c) Define the term Baluster and Handrail. (d) Draw the schematic diagram of 1-1/2 thick English bond.. (e) What do you mean by water-cement ratio? (f) Write the uses of cast iron. (g) What do you mean by curing of concrete? (h) What do you mean by site reconnaissance? (i) What are types of pile? (j) Define retaining wall.	2x10
2.	Answer any SIX questions (a) What are the characteristics of a good timber? (b) What are the types of cement? Explain about any 3 types of cement. (c) What do you mean by workability of concrete? Describe the importance of workability on the strength of concrete. (d) What are the types of paints? Explain any five types. (e) Describe the purpose of use of arch and lintel in a building. (f) Describe briefly about the damp-proofing treatment. (g) What do you mean by green building .Describe different types of energy audit in a building.	5x6
3.	Name various types of doors. Describe about any two types of door with neat sketch.	10
4.	Describe various types of staircases with neat sketches.	10
5.	Explain different operations involved in the brick manufacturing process.	10
6.	Explain the geological and physical classification of rock. Give at least two examples from each rock.	10
7.	Describe the process of white washing and distempering on a new plastered surface.	10