PAPER ID-411284

Roll No:

BTECH
(SEM IV) THEORY EXAMINATION 2023-24
MATERIALS, TESTING & CONSTRUCTION PRACTICES

TIME: 3 HRS   **M.MARKS: 70**

Note: **1.** Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1.   **Attempt *all* questions in brief.**   **2 x 7 = 14**

a.	Why is it important to study the property of building materials?	2
b.	What is the major constituent of the manufacture of bricks?	2
c.	What is the difference between paints and varnishes	2
d.	Does fly ash affect concrete strength?	2
e.	What is the purpose of preliminary investigation of soil?	2
f.	What are site layout plans?	2
g.	What is the feature of couple roof?	2

SECTION B

2.   **Attempt any *three* of the following:**   **7 x 3 = 21**

a.	Explain hydration of cement and what are the different types of compounds formed during hydration.	7
b.	Write the engineering properties of glass. Also write the types of glass used in construction.	7
c.	With neat sketches explain the types of foundations used in various type of construction	7
d.	Where are arches provided? Give the name classifications of lintel with base of use of materials. Draw the neat sketch of reinforced brick lintel.	7
e.	Describe the methods of damp proofing with sketch for the following (a) Foundations (b) Basement in area having high water table	7

SECTION C

3.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

a.	Give the classifications of lime based on properties and usage by IS 712-1973.	7
b.	Define steel slag. Where the steel slag used? Give the advantages and disadvantages of steel slag.	7

4.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

a.	Write the insulation standards as per IS3792-1966. Write the methods of thermal insulation of roofs with figure.	7
b.	Why is silica fume used in high -strength concrete? What does it do?	7

5.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

a.	Explain with the diagram of cavity wall. Also write the purpose of cavity wall.	7
b.	Draw a neat sketch of Arch and discuss their technical terms used in arch.	7

6.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

a.	Define form work. Explain with neat sketch of vertical shores.	7
b.	What is underpinning? With neat sketch explain underpinning by pit method.	7

7.   **Attempt any *one* part of the following:**   **7 x 1 = 7**

a.	With neat sketch explain (a)Ventilation due to wind effect (b) Ventilation due to stack effect.	7
b.	What are the problems with 3D printing in construction? What materials are used in 3D printing construction?	7