

B.E.C.E. 1st YEAR EXAMINATION, 2019 (OLD)
(2nd Semester)

SUBJECT: Building Material and Construction

Full Marks 100

Time: Three hours

Use a separate Answer-Script for each part

No. of
Questions

Part I (Full Marks 60)

Marks

Answer question number 1(compulsory) and any four from the rest. All the drawings should be in pencil.

1×10=10

Q1. a) Fill in the Blanks:

- i. The size of nominal brick used in India-----
- ii. The full form of NBC with reference to building materials and construction is _____
- iii. The temporary construction of bamboos, pipes, planks etc. to provide space and platform for workers during building construction is known as _____
- iv. The volume of one bag of good quality cement is _____
- v. The thin fibers which extend from the pith outwards are known as _____
- vi. Vicat's apparatus is used to determine _____ of cement.
- vii. The cement sand ratio adopted for pointing work is _____
- viii. For deep foundation the breadth to depth ratio should be _____
- ix. The masonry work where undressed stones are used is termed as _____
- x. The fixture which prevents the entry of foul gas from the sewer line to the outside is known as _____

Q1. b) Differentiate between

2×5=10

- i. Masonry structure and framed structure
- ii. One pipe system and two pipe system of wastewater plumbing
- iii. Single Flemish bond and double Flemish bond
- iv. Setting and hardening for cement
- v. Rindgall and Knot

Q2.a) With neat sketch define: queen closure, king closure and frog for brick

2×5=10

b) Describe two tests to check the quality of sand

Q3. With neat sketch define the following types of foundations: isolated footing, combined trapezoidal footing, strap footing, raft foundation, friction pile

2×5=10

Q4. Write the chemical formula, full name of the following basic ingredients of Ordinary Portland cement and explain the functions played by each: C_3S , C_2S , C_3A , C_4AF

2.5×4=10

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No. of Questions	Part I (Full Marks 60)	Marks
Q5.	Write two characteristics of soft wood. Explain cambium layer. Define seasoning of timber. Name two diseases of timber. Name two industrial timber products.	2×5=10
Q6.	Name two DPC that can be used as building materials. Discuss the function of 1st layer and third layer of plastering work. What is neat cement punning? On what situations you recommend pointing works? What is curing for granolithic floor?	2×5=10
Q7.	State where to find and explain the functions of ^{the} following components of water and or wastewater plumbing system: ferrule, cowl, goose neck pipe, soil pipe, antisiphonage pipe	2×5=10

**B.E. CIVIL ENGINEERING FIRST YEAR SECOND SEMESTER EXAM –
2019 (Old)**

**BUILDING MATERIAL & CONSTRUCTION
PART-II**

Time: Three Hours

Full Marks 100
(40 marks for this part)

Use a separate Answer-Script for each part

No. of questions	Part II (Answer all the questions.)	Marks (2X20=40)
1 (a)	Discuss in details about different types of reinforcement used in a beam with a neat sketch.	[10]
(b)	Write down the criteria for reinforcement requirement of a rectangular column with a proper sketch.	[5]
(c)	Classify different types of foundation with proper sketches.	[5]
2 (a)	Draw the reinforcement details of an isolated footing for a column of size 300 x 300 mm. Others details are given below: Main reinforcement in column = 4 – 20 Φ bars. Transverse Reinforcement = 8 Φ @ 175 c/c. Plan size of footing = 2.5 x 2.5 m. Footing depth at column face = 500 mm. Footing depth at edge = 150 mm. Depth of foundation = 1200 mm. Footing reinforcement = A mesh of 16 Φ @ 175c/c.	[10]
(b)	Define one way and two way slab. Draw typical reinforcement details of a one way and two way slab in plan with two sections of each.	[2+8]