

**II B.Tech I Semester Supplementary Examinations, November 2006**  
**BUILDING MATERIALS AND CONSTRUCTION**  
**(Civil Engineering)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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1. (a) What are the precautions to be taken in the process of blasting.  
(b) Write a brief note on preservation of stones.  
[8+8]
2. With the help of a neat sketch, explain the working of Hoffman's kiln for the burning of bricks.  
[16]
3. Write short notes on:  
(a) Fineness test on cement.  
(b) Poor lime.  
(c) Sulphate resisting Portland cement.  
[5+5+6]
4. What is seasoning of timber? Explain various methods?  
[16]
5. Design an isolated stepped footing for a brick pillar, 30cm × 30cm, carrying a super imposed load of 250kN at its top. The height of the column above ground level is 3.5m. The brick masonry weighs 19.5kN/m<sup>3</sup> while lime concrete to be used in the base weighs 21 kN/ m<sup>3</sup>. The soil has angle of repose of 30°, unit weight of 17 kN/m<sup>3</sup> and safe bearing capacity of 160 kN/m<sup>2</sup>. The foundation concrete has a modulus of rupture equal to 150 kN/m<sup>3</sup>.  
[16]
6. Write short notes on the following  
[4x4]
  - (a) Asbestos cement partitions.
  - (b) Metal partitions.
  - (c) Wood wool slab partitions.
  - (d) Straw board partitions.
7. (a) Define a flat roof and mention its advantages & disadvantages over pitched roofs.  
(b) Explain king post truss along with a neat sketch.  
[10+6]
8. (a) What are the requirements of good plaster?

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<b>Set No. 1</b>
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(b) Discuss the mortars which are used for painting and plastering.

[6+10]

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1. (a) What are the qualities of good building stones? Discuss them.  
(b) What is the texture of rock. Enumerate its various types.  
[8+8]
2. (a) What are the harmful ingredients in brick earth and explain them.  
(b) Explain the classification of brick earth.  
[8+8]
3. (a) i. What are the advantages and disadvantages of pozzolana cement?  
ii. What are the harmful constituents of cement?  
(b) Explain the properties of hardened concrete.  
[8+8]
4. (a) Explain the advantages of timber construction.  
(b) Explain what is meant by felling of trees? Describe important points to be remembered in connection with felling of trees.  
[8+2+6]
5. (a) What is a raft foundation ? When and where is it preferred to other shallow foundations. Explain with a neat sketch.  
(b) What are floating foundations? Where are they useful? How does they differ from other foundations.  
[10+6]
6. (a) What are the merits and demerits of English bond over Flemish bond?  
(b) State the reasons for cracks in brick masonry.  
[8+8]
7. (a) Define a lintel and mention the materials which are commonly used to construct it.  
(b) Describe briefly the construction of R.CC lintel.  
[8+8]
8. What is the object of painting or varnishing a surface and where will you prefer a paint to varnish and vice versa?  
[16]

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1. What are the special varieties of glasses and explain them in detail. [16]
2. With the help of a neat sketch, explain the working of Hoffman's kiln for the burning of bricks. [16]
3. (a) Explain the importance of Bogue compounds in cement.  
(b) What is meant by curing of concrete? What are its purposes? Explain different methods of curing of concrete. [8+2+2+4]
4. (a) Describe the process of conversion of timber.  
(b) What are the factors that affect physical properties of steel. [8+8]
5. Describe two methods of foundations on black cotton soils in detail. [16]
6. (a) What are the general principles in the stone masonry.  
(b) Name the various types of Ashlar masonry. Describe in brief the construction of walls with Ashlar fine masonry with neat sketches. [8+8]
7. (a) Define a flat roof and mention its advantages & disadvantages over pitched roofs.  
(b) Explain king post truss along with a neat sketch. [10+6]
8. Describe the procedure of carrying out plastering in cement mortar on new and old wall separately? [16]

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1. (a) What are the precautions to be taken in the process of blasting.  
(b) Write a brief note on preservation of stones.  
[8+8]
2. Explain the following:  
(a) Slop-moulded brick and sand-moulded brick.  
(b) Ordinary brick and fire-brick.  
[16]
3. (a) What is soundness of cement ? how it is determined in laboratory ?  
(b) What is fineness of cement ? How it is determined in laboratory?  
[8+8]
4. (a) What are the forces responsible for causing natural defects in timber? Explain such natural defects of timber.  
(b) Explain how galvanized iron can be alternate material for wood.  
[4+4+8]
5. (a) What are the points to be considered while designing foundations on reclaimed soils.  
(b) Discuss the essential requirements of a good foundation.  
[8+8]
6. (a) Explain some specially shaped bricks, along with their places of use (with neat sketches)  
(b) Explain the following with sketches
  - i. Perpend.
  - ii. Lap.
  - iii. Bed.
  - iv. Arises.  
[10+6]
7. (a) What are the different types of floors.

- (b) What are the factors to be considered while the selection of flooring is carried out.

[4+12]

8. What is the object of painting or varnishing a surface and where will you prefer a paint to varnish and vice versa?

[16]

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