I. Rocks

(1) Briefly describe the following
   a) Dressing of stone
   b) Quarrying
   c) Preservation of stone

(2) Discuss the three important type of rocks and their formation.

(3) Name the various types of stones which are used for building works and give in brief the specifications for a good building stone.

(4) Explain the classification of Rocks in detail.

(5) What is the natural bed of stone? Why it is necessary to set a along its natural bed.

(6) What are the tests to which a stone should be subjected before it is selected for building purpose?

(7) What are the types of explosives generally used in blasting the rocks?

(8) Give the characteristics and uses of the following stones:
   a) Granite
   b) Marble
   c) Sandstone
   d) Slate

(9) Describe the various weathering agencies responsible for deterioration of stones.

(10) Describe the process of blasting rocks. State the precautions to be exercised.

II. Bricks

1. What are the properties of first class bricks?
2. What are the constituents of good bricks-earth?
3. Describe briefly the tests to which bricks may be put before using them for engineering purposes.
4. Describe the process of manufacture of clay bricks.
5. Describe the common defect in bricks.
6. Describe the how bricks are classified?
7. What is efflorescence in bricks? What are its causes and remedies?
8. What do you understand by glazing? How it is done.
9. Diff between
   a) over burnt and under burnt
   b) perforated and hollow bricks.
10. What are the factors to be considered while selecting a site for the manufacture of bricks.?

III. Cement

(1) Write short notes on
   a) Hydration of cement
   b) Grinding of cement
   c) Clinkering
   d) Use of gypsum in cement

(2) What are the ingredients of portland cement? State the function and limits of each of them.

(3) Describe with flow diagrams the dry and wet process of manufacture of cement

(4) Describe the setting and hardening of cement

(5) What do you mean by normal consistency? What it is significance? How it is tested.?

(6) Differentiate between rapid hardening and slow setting cements.

(7) Write short notes on:
   a) Compressive strength test of cement
   b) Soundness test of cement
   c) Tensile strength test of cement

(8) How is the cement classified?

(9) What is the effect of grinding on cement? Describe the method of determining fineness by air permeability method.

(10) What is rapid hardening cement? What is responsible for it high early strength? How does it differ from ordinary portland cement

(11) What is the purpose of adding gypsum while manufacturing cement?

IV. Concrete

(1) What is bulking of sand? How does it affect concrete mix?
(2) Discuss curing? What is its significance.
(3) Define water-cement ratio. How does it influence concrete strength?
(4) Describe the procedure of preparing good quality concrete.
(5) How nominal mix concrete is different from design mix concrete.
(6) Write short notes on:
    a) Segregation
    b) Bleeding
    c) Sulphate Attack.
(7) What is meant by M30 grade concrete?
(8) Define creep. What are its advantages and disadvantages.
(9) What is shrinkage? What factors promote shrinkage? What precautions will you take to reduce it?.
(10) What are the factors affecting workability of concrete?.

V. [Wood & wood products] + [Asphalt] + [Pozzolona] + [Gypsum]

1. What is seasoning of timbers and why it is done.?
2. What is the effect of paint on unseasoned timbers?
3. What is the difference between soft wood and hard wood.?
4. Write short notes on the following
   a) Defects in Timber
   b) Plywood
   c) Preservation of timber
   d) Hard board
   e) Veneers
5. Describe various defects in timber?.
6. Define bitumen, asphalt and tar and how do they differ?.
7. What is meant by flash point and fire point of bitumen?
8. How bitumen is tested for ductility?
9. Give the comparison of tar and asphalt in a tabular form.
10. What is puzzolana? How it is classified?
11. Write short notes on
    a) Fly ash b) Surkhi
    c) Rice husk ash d) Blast-furnace slag
12. Discuss briefly the various effects of adding Puzzolanas to cement concrete.