



BRAINWARE UNIVERSITY

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Brainware University
Barasat, Kolkata -700125

Term End Examination 2022

Programme – B.Tech.(CE)]-2021

Course Name – Building Planning and Materials

Course Code - PCC-CE303

(Semester III)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) A window should be located on which of the following side of a room as seen from the point of view of fresh air?
- | | |
|-------------|-------------|
| a) Western | b) Eastern |
| c) Southern | d) Northern |
- (ii) Seasoning of timber is the process of:
- | | |
|-------------------|-------------------------|
| a) Burning timber | b) Adding preservatives |
| c) Removing water | d) Adding glaze |
- (iii) The plywood
- | | |
|--|--|
| a) Can be spilt in the plane of the panel | b) Cannot be bent more easily than ordinary wood of same thickness |
| c) Has greater impact resistance to blows than ordinary wood | d) Has good strength along the panel only |
- (iv) The _____ is a mixture of cement, sand, pebbles or crushed rock and water, which, when placed in the skeleton of forms and are allowed to cure, becomes hard like a stone.
- | | |
|--------------------|------------------|
| a) Cement concrete | b) Cement slurry |
| c) Cement grouting | d) Cement mortar |
- (v) How many methods of artificial seasoning are there?
- | | |
|------|------|
| a) 2 | b) 5 |
| c) 6 | d) 7 |
- (vi) What are building materials?
- | | |
|---|--|
| a) Substance that which cannot be utilised in the construction of a structure | b) Substance that is utilised in the construction of a structure |
| c) Substance that is utilised in the manufacturing of construction materials | d) None of the mentioned |
- (vii) The _____ provides support to the occupants, furniture, fixtures and equipments

- of a building.
- a) Plinth
c) Ramp
- b) Floor
d) Lifts
- (viii) There is initial _____ of cement concrete which is mainly due to loss of water through forms, absorption by surfaces of forms, etc.
- a) Swelling
c) Dispersion
- b) Cracking
d) Shrinkage
- (ix) It is found that the _____ are not seriously affected until very high temperature of 1200°C to 1300°C are reached.
- a) Plastic
c) Sandstone
- b) Limestone
d) Brick
- (x) The presence of moisture in the sand _____ the volume of the sand.
- a) Increases
c) Shrink
- b) Decreases
d) Contract
- (xi) If the concrete mix is too wet, the _____ settle at the bottom of concrete. Masha and the resulting concrete becomes of non uniform composition.
- a) Fine aggregate
c) Sand
- b) Coarse aggregate
d) Cement
- (xii) Which of the following is a non combustible building material with low coefficient of expansion?
- a) Glass
c) Brick
- b) Asbestos cement
d) Sandstone
- (xiii) What is the speciality of FALG bricks?
- a) Are composed of agricultural waste
c) Economic alternative to clay bricks
- b) Round in shape
d) Widely used in masonry work
- (xiv) Burnt bricks can be further classified into how many types?
- a) 2
c) 6
- b) 4
d) 8
- (xv) Which of the following is not a feature of second class bricks?
- a) Have small irregularities
c) Rectangular in shape
- b) Water absorption is between 20-25%
d) Free from cracks

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Explain Bulking of sand. (3)
3. Write briefly on necessity of proper ventilation in a room. (3)
4. Write down classification of bricks are per physical requirement. (3)
5. Explain the characteristics of good brick. (3)

OR

State the characteristics of good oil paints. (3)

6. A building is to be constructed on a plot area of 1050 sq.m. The site abuts two streets, one of 20 m width and the other of 10 m, FAR is 2.0. If each storey contains 3 flats, determine the built-up area of the building and its height. Ground coverage is maximum 50%. (3)

OR

Write the proportions of M10, M15, M20 and M25 grades of concrete. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Explain what is alkali aggregate reaction and what are the factors affecting it? (5)

8. Explain the principal causes of decay of timber. (5)
9. Classify building based on fire protection. Discuss in brief on general requirements for fire protection of buildings upto 14.5 m height. (5)
10. Define workability and water cement ratio of concrete. (5)
- OR
- Define what is curing of concrete and why it is required? (5)
11. Explain the test for determination of bulking of sand. (5)
- OR
- Explain Aggregate Impact Value Test. (5)
12. Briefly explain the various defects in timber. (5)
- OR
- Write in brief about slaking of lime and carbonate hardening of lime. (5)

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