

Total No. of printed pages = 7

END SEMESTER EXAMINATION – 2020

Semester : 4th

Subject Code : CT-405

**BUILDING CONSTRUCTION
AND MAINTENANCE**

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks
for the questions.

The Question Paper consists of two parts
PART – A and PART – B. Both are compulsory.

PART – A

Marks – 25

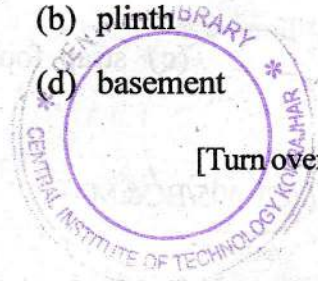
All questions are compulsory.

1. Choose the correct answer : $1 \times 5 = 5$

(i) The lowest part of a structure which
transmits the load of the soil is known as

- (a) superstructure (b) plinth
(c) foundation (d) basement

[Turn over



(ii) The raft foundation is generally used when the required area of the footing is

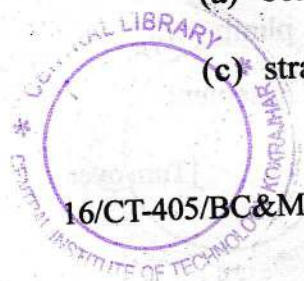
- (a) more than one-fourth of the total area of the structure
- (b) less than one-fourth of the total area of the structure
- (c) more than one-half of the total area of the structure
- (d) less than one-half of the total area of the structure

(iii) In a sloping roof the inclined wooden members laid from the ridge to the eaves are known as

- (a) hip rafter (b) jack rafter
- (c) common rafter (d) valley rafter

(iv) When two or more footings are connected by a beam it is called

- (a) beam footing (b) combined footing
- (c) strap footing (d) mat footing



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(v) The piles which do not support the load by themselves, but act as a medium to transmit the load from the foundation to the substratum is known as

- (a) friction pile (b) bearing pile
(c) batter pile (d) compaction pile

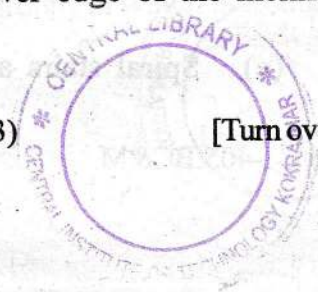
2. Fill in the blanks : 1×10=10

- (a) _____ is the level platform at the top or bottom of a flight.
- (b) The floors supported directly on the ground are known as _____.
- (c) _____ are the diagonal member fixed on a standard.
- (d) The inner portion of the wall between the facing and backing is known as _____.
- (e) The apex line of the sloping roof is called _____.
- (f) _____ is the lower edge of the inclined roof surface.

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(3)

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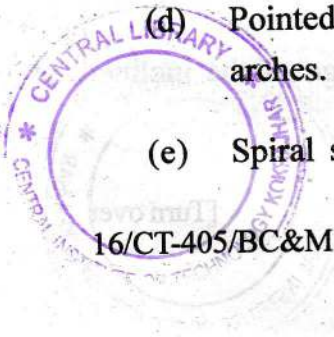
- (g) _____ roof is preferred in veranda.
- (h) _____ is the vertical outside member of the shutter of a door or window.
- (i) All joints of the form work should be stiff so that _____ deformation under loads is minimum.
- (j) The hearting of each of the thicker wall consists entirely of _____.

3. Read the following statements. Write TRUE or FALSE against each : 1×5=5

- (a) Crown is the highest point of the intrados.
- (b) A grillage foundation can be treated as a deep foundation.
- (c) Upper floors have the major problems of strength and stability.
- (d) Pointed arch comes under two centred arches.
- (e) Spiral stairs are used as emergency stairs.

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(4)



4. Match the correct answer from Column - B for the statements given in Column - A : $1 \times 5 = 5$

Column - A	Column - B
(i) A brick cut length wise	(a) king closer
(ii) A brick cut across the width	(b) cross-joint
(iii) A brick cut between the centre of one end and the centre of the other long end.	(c) bat
(iv) Joints perpendicular to the face of the wall.	(d) perpend
(v) Joints lie directly above the vertical joints in the alternate courses.	(e) queen closer

PART - B

Marks - 45

Answer any *five* questions. $9 \times 5 = 45$

5. (a) Enlist the loads which are to be taken into account while designing the foundation of a structure. 2
- (b) What are the various components of a building? 2
- (c) Discuss the various groups in which buildings are divided. 5

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(5)

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6. (a) Explain the following terms : 4
quoin, frog, racking and toothing.
- (b) What are the general principles observed in brick masonry ? 5
7. (a) How bearing of a lintel is calculated ? 3
- (b) Why tie beam and collar beam are provided in a roof truss ? 4
- (c) How arches are different from lintels ? 2
8. (a) Discuss the following flooring materials : 4
Muram, Terrazzo, Granolithic and Mosaic.
- (b) How guniting method is applied in damp proofing ? 3
- (c) Define masonry. 2
9. (a) How doors and windows are located in a room ? 3
- (b) At what circumstances, double and cantilever scaffolding should be used ? 2+2=4
- (c) Name the various building finishes. 2

10. (a) Write any five principles for providing DPC. 5

(b) Define the following terms : 4
Blistering, Cracking, Crazing, Flaking.

11. (a) Define form work and enlist the various loads coming on form work 1+3=4

(b) Give the various Indian standards on form work. 5

