

T. Y. B.ARCH. SEM – VI (2010 COURSE) : WINTER - 2018

**SUBJECT: THEORY OF STRUCTURES & BUILDING
MATERIALS-VI**

Day: Wednesday
Date: 21/11/2018

W-2018-3465

Time: 10.00 AM TO 01.00 PM
Max Marks: 100

N.B:

- 1) Attempt any **THREE** questions from **Section-I** & all Four from **Section-II**.
- 2) Answer to both sections should be written in **SEPARATE** answer Book.
- 3) Illustrate your answers with neat sketches **WHEREVER** necessary.
- 4) Use on non- programmable **CALCULATOR** is allowed.
- 5) Assume suitable data if necessary.

SECTION-I

- Q.1 a)** Write short note on: (10)
 i) Pile foundation
 ii) Difference between isolated and combined footing
- b)** Design the rectangular footing for the following data: (10)
Axial load on column= 150KN
Size of column= 350 mm X 500 mm
Longitudinal reinforcement in column= 7 bars of 16mm
Allowable pressure on soil = 280KN/m²
Characteristics strength of concrete= 20 N/mm²
Characteristics strength of steel= 415 N/mm²
- Q.2 a)** Draw stress block diagram for balanced reinforced beam having T- section. (10)
b) Write difference between post tension and pretension pre-stressed concrete. (10)
- Q.3 a)** A built up column is composed of two channel sections placed back to back (12)
at a distance of 250 mm. Find the maximum load it can carry. The length of
column is 7m with one end hinged and other end is fixed. Use ISMC400.
Design battening system for the same and draw neat sketch.
- b)** Write a short note on doubly reinforced section of RC beam with neat sketch. (08)
- Q.4 a)** Give the seismic design requirements for RCC and steel building. (10)
b) State the advantages and disadvantages of L.S.M. over W.S.M. (10)

SECTION-II

- Q.5** What are the different types of insulating materials used in ceilings and (10)
partitions? Explain the examples with sketches.
- Q.6** What are adhesives? Explain with example of their applications in buildings. (10)
- Q.7** Write a note on manufacturing and applications of various types of glass in (10)
building construction.
- P**
Q.8 Explain in detail the types of sealants and their applications in buildings. (10)

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