Total No. of Questions : 6]

SEAT No. :

P4184

[Total No. of Pages : 2

[4960]-39

M.E. (Civil Structure) (Semester - I)

DESIGN OF COMPOSITE CONSTRUCTION

(2008 Pattern) (Elective - I)

Time : 4 Hour] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Solve any two questions from each section.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right side indicate full marks.***
5) ***Use of Calculator is allowed.***
6) ***Assume Suitable data necessary***

SECTION - I

Q1) a) Explain code provisions in IS, BS &Euro code with reference to flexural behavior of composite used in Construction. **[9]**

b) Explain advantages of using composite construction and its applications. **[8]**

c) State basic design considerations of composite beam. **[8]**

Q2) a) Explain types of sheeting used for composite construction; Explain its utility, applications, its material properties. **[9]**

b) How longitudinal shear, longitudinal slip, deflection, vertical shear is considered in composite construction. **[8]**

c) Explain structural failure patterns and its possible reasons, in composite beam. **[8]**

Q3) a) Explain structural behavior of concrete filled tubular circular column under axial load. **[8]**

b) Explain prefilled decking system ,and its steps to structural design. **[8]**

c) How fire resistance is taken care of in composite design. Explain in brief. **[9]**

P.T.O.

SECTION - II

Q4) a) Explain schematically composite truss ,its structural range and application. Its advantages and disadvantages. **[13]**

b) Draw neat structural arrangement in composite truss with details of connectors. Show important ,typical details on sketch. **[12]**

Q5) a) State design steps to consider fire protection in composite construction, as stated in code. **[8]**

b) What is geometric imperfections, why they are induced, How are they are eliminated in composite construction. **[8]**

c) Sketch typical composite foundation showing important connection details .**[9]**

Q6) a) Sketch typical composite bridge deck slab and detail it. **[8]**

b) Write design steps of composite beam with all necessary checks as per code provisions. **[8]**

c) Design composite simply supported beam of span 10 meters to carry load 5 KN/m.Use composite constructions. Select appropriate constituents for composite construction. Assume their appropriate properties for design. Apply suitable code provisions and checks. **[9]**