Total No. of Questions : 12]

SEAT No. :

P3682

[Total No. of Pages :4

[4759] - 29
B.E. (Civil)
FERROCEMENT TECHNOLOGY
(2008 Course) (Semester - II) (Open Elective)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Answer from Section I answer Q.1 or Q.2, Q.3or Q.4, Q5. or Q.6 and from Section II answer Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12.***
2) ***Answers to the two sections should be written in separate answer books.***
3) ***Figures to the right indicate full marks.***
4) ***Neat diagrams should be drawn wherever necessary.***
5) ***If necessary, assume suitable data and indicate clearly.***
6) ***Use of electronic pocket calculator is allowed.***

SECTION - I

Q1) a) Explain in brief "Ferrocement as a material of construction". **[6]**

b) What are different properties and specifications of raw materials used for Ferrocement Technology? **[6]**

c) Write a note on "Forming of Ferrocement structures". **[6]**

OR

Q2) a) Advantages and Disadvantages of ferrocement over RCC structures. **[6]**

b) Explain the concept of "Ferrocement" with respect to following points: **[3×4 = 12]**

i) Definition

ii) Classification of ferrocement

iii) Typical characteristics

iv) their Applications

Q3) a) Explain the effect of shrinkage and creep on ferrocement units. **[6]**

P.T.O.

b) Explain the standardizing method of constructing ferrocement structures with the help of following points. **[2×5 = 10]**

i) Planning the work

ii) tying of wire meshes

iii) mortaring & curing

iv) maintenance

v) Protective surface treatments given to the same.

OR

Q4) a) Explain the role of form and shape of fabricating skeleton to increase the strength parameter of ferrocement structures. **[8]**

b) Explain the causes and preventive measures for damage to the ferrocement structures. **[8]**

Q5) a) Explain the special design considerations for ferrocement structures. Also explain the conventional design methods like working stress, load factor, applied to ferrocement. **[8]**

b) Draw the neat sketches of various structural shapes like stiffened plates, arch faced walls, stiffened cavity walls and hollow floors and beams & also give the comparative study. **[8]**

OR

Q6) a) Draw the neat sketches of various structural forms like 'T', 'U', '+', 'L' & Also give the comparative study of behavior forms in respect of strength and design parameters with ferrocement technology. **[10]**

b) Enlist and explain properties of ferrocement structures under static and dynamic loading conditions. **[6]**

SECTION - II

Q7) a) Explain in detail the ferrocement building component you seen with reference to following: material of construction, analysis and design principles, process of construction, quality control and maintenance.**[9]**

b) Explain the design and construction of houses with following ferrocement building accessories: cavity walls, hollow floors, hollow beams, staircases and other building accessories. **[9]**

OR

Q8) a) Explain the special characteristics of ferrocement to resist shock affected during earthquakes. **[6]**

b) Write a note on "Design and Construction of quake proof structures". **[6]**

c) Enlist and explain factors governing cost and value of ferrocement in building constructions. Also compare cost of ferrocement structures with conventional structures. **[6]**

Q9) a) Compare all parameters of ferrocement counterforth retaining wall with reference to conventional counterforth retaining wall. **[8]**

b) What is ferrocement? Enlist the different applications of ferrocement in hydraulic structures and explain any one in detail. **[8]**

OR

Q10)a) Explain the use of ferrocement in water retaining structures along with layered form used for water proofing, lining and surface coating. **[8]**

b) Explain method of fabrication and casting of containers for storing granular materials & counterforth retaining wall. **[8]**

Q11)a) Write a note on: "Joints in Ferrocement precast elements". **[6]**

b) Explicate role of ferrocement technology in construction of modern space structures like shells, pyramids, domes etc. **[6]**

c) What is the need of ferrocrete technology in different types of building components in today's world? **[4]**

OR

Q12)a) Explain in detail the industrial precast ferrocrete elements you seen with: **[8]**

i) Raw materials of construction

ii) analysis and design principles

iii) manufacturing process

iv) Testing methodology and quality control

b) Which are different precast ferrocement products you seen yet? Explain design and fabrication of ferrocement precast walling and flooring panels in detail. **[8]**

☼ ☼ ☼