Total No. of Questions : 12]

SEAT No. :

P3940

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[4959]-29

B.E. (Civil Engineering)

FERROCEMENT TECHNOLOGY

(2008 Course) (Elective - IV) (Open Elective) (Semester - II)

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

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***
4) ***Assume suitable data, if necessary.***
5) ***Use of calculator is allowed.***
6) ***Answers to the Section - I and Section - II must be written in two separate answer sheets.***

SECTION - I

Q1) a) Define ferrocement? What are the different characteristics of it? Also discuss merits and demerits of ferrocement over reinforced concrete? **[10]**

b) Explain special type of ferrocement along with its applications? **[8]**

OR

Q2) a) Write a note on tools and plants used in ferrocement technology? **[10]**

b) Explain proportioning of cement mortar using ferrocement technology? **[8]**

Q3) a) Explain in detail process of constructing ferrocement structures in respect of: **[5 × 2 = 10]**

i) planning the work

ii) fabricating skeleton

iii) tying of wire meshes

iv) mortaring

v) curing

b) Enlist different mechanical properties and typical features affecting design of ferrocement structures. **[6]**

OR

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Q4) a) Enlist the various construction methods of ferrocement. Explain the skeleton armature method with advantages and disadvantages. **[8]**

b) Explain the effect of creep and shrinkage on ferrocement structures and also the protective surface treatment given to the same. **[8]**

Q5) a) What are the special design considerations for ferrocement and typical features of ferrocement affecting design? **[8]**

b) Explain in detail specific surface method and crack control method. **[8]**

OR

Q6) a) Enlist and explain properties of ferrocement structures under static and dynamic loading conditions. **[8]**

b) Draw the neat sketches of various structural forms & Also give the comparative study of behavior forms in respect of strength and design parameters with ferrocement technology. **[8]**

SECTION - II

Q7) a) State and explain factors governing cost analysis. Also compare cost of ferrocement structures with conventional structures. **[10]**

b) Explain the role of ferrocement in building construction of following building accessories: **[4 × 2 = 8]**

i) foundations

ii) walls

iii) floors

iv) roofs

OR

Q8) 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.**[10]**

b) Explain the special characteristics of ferrocement to resist shock affected during earthquakes. **[8]**

Q9) a) What are different applications of ferrocement with hydraulic structures. Explain in detail any one. **[8]**

b) Explain design & method of fabrication and casting of counterfort retaining wall. **[8]**

OR

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

b) Compare ferrocement container with conventional container for storage of granular materials. **[8]**

Q11)a) Give the different methods of ferrocement precasting and Explain any one in detail. **[8]**

b) Give the testing methodology and quality control for ferrocrete materials. **[8]**

OR

Q12)a) Explain role of ferrocement technology in construction of large size special purpose structures like shell and domes. **[8]**

b) Explain the need of ferrocrete technology in different types of building components in today's world. **[8]**