

Total No. of Questions : 12]

SEAT No. :

P1155

[Total No. of Pages : 3

[4659]-29

**B.E. (Civil) (Semester - II)**

**FERROCEMENT TECHNOLOGY**

**(2008 Pattern) (Open Elective - IV (f))**

*Time : 3 Hours]*

*[Max. Marks : 100*

*Instructions to the candidates :*

- 1) *From Section - I Answer Q.1 or Q.2; Q.3 or Q.4; Q.5 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)** Explain ferrocement in respect of : **[18]**

- a) Definition.
- b) Special types of ferrocement.
- c) Merits and Demerits of ferrocement over RCC.
- d) Applications of ferrocement.
- e) Typical characteristics of ferrocement.

OR

- Q2)**
- a) Write a note on ferrocement as substitute for conventional building materials. **[4]**
  - b) What are different properties and specifications of raw materials used for Ferrocement Technology? Also write a note on proportioning of cement mortar. **[8]**
  - c) Write a note on job requirements of required skills and also the tools and plants used for ferrocement technology. **[6]**

**P.T.O.**

- Q3)** a) Explain in detail process of constructing ferrocement structures in respect of **[10]**
- i) planning the work.
  - ii) fabricating skeleton
  - iii) tying of wire meshes
  - iv) mortaring
  - v) curing

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

OR

- 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) Enlist different conventional design methods applied to ferrocement and explain the design based on equivalent area method for compression, tension, and flexural members. **[8]**
- b) Explain in detail specific surface method and crack control method. **[8]**

OR

- Q6)** a) Draw the neat sketches of various structural forms and Also give the comparative study of behaviour forms in respect of strength and design parameters with ferrocement technology. **[8]**
- b) What are the special design considerations for ferrocement and typical features of ferrocement affecting design. **[8]**

### **SECTION - II**

- Q7)** a) State and explain factors governing cost analysis. Also compare cost of ferrocement structures with conventional structures. **[8]**
- b) Explain the role of ferrocement in building construction of following building accessories : **[8]**
- i) foundations
  - ii) walls
  - iii) floors
  - iv) roofs

OR

**Q8)** a) Explain the special techniques to resist shocks of ferrocement structures affected during earthquake. [8]

b) 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.[8]

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

b) Explain design and method of fabrication and casting of counterforth retaining wall. [8]

OR

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

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

**Q11)** a) Explain role of ferrocement technology in construction of large size special purpose structures like shell, pyramids, domes etc. [9]

b) Why ferrocement is use for precasting? Give the different methods of ferrocement precasting and Explain any one in detail. [9]

OR

**Q12)** a) Write a note on : [6]  
Ferrocement precast walling and flooring panels.

b) Explain in detail the industrial precast ferrocement concrete elements you seen with : [6]

i) raw materials of construction

ii) analysis and design principles

iii) manufacturing process

iv) testing methodology and quality control

c) What is the need of ferrocement technology in different types of building components in todays world. [6]

