Total No. of Questions : 12]

SEAT No. :

**P2658**

[Total No. of Pages : 3

**[5154]-29**

# B.E. (Civil Engineering )
# FERROCEMENT TECHNOLOGY
## (2008 Course) (Semester-II) (Open Elective-II)

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

***Instructions to the candidates:***

1) ***Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8, Q9 or Q10 and Q11 or Q12.***
2) ***Figures to the right indicate full marks.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***If necessary, assume suitable data and indicate clearly.***
5) ***Use of electronic pocket calculator is allowed.***

***Q1)*** a) Explain in brief " Ferrocement as a material of construction". **[8]**

b) What are different properties and specifications of raw materials used for Ferrocement Technology? Also write a note on proportioning of cement mortar. **[8]**

OR

***Q2)*** a) Explain the effect of creep and shrinkage on ferrocement structures and also the protective surface treatment given to the same. **[8]**

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

***Q3)*** 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

***Q4)*** 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. **[8]**

b) Write a note on " Forming of Ferrocement structures". **[8]**

***P.T.O.***

***Q5)*** a) Enlist and explain factors governing cost and value of ferrocement in building constructions. Also compare cost of ferrocement structures with conventional structures. **[9]**

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

OR

***Q6)*** a) Write a note on "Design and construction of quake proof structures". **[9]**

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. **[9]**

***Q7)*** a) Compare all parameters of ferrocement counterforth retaining wall with reference to conventional counterforth retaining wall. **[8]**

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

OR

***Q8)*** a) Enlist and explain factors governing cost and value of ferrocement in building constructions. Also compare cost of ferrocement structures with conventional structures. **[8]**

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

***Q9)*** a) Write a note on: **[9]**
Ferrocement precast walling and flooring panels.

b) Explain in detail the industrial precast ferrocement concrete elements you seen with: **[9]**

i) raw materials of construction.

ii) analysis and design principles.

iii) manufacturing process.

iv) Testing methodology and quality control.

OR

***Q10)***a) Enlist and explain joints in precast ferrocement elements. **[6]**

b) Explain role of ferrocement technology in construction of large size special purpose structures like shell and domes. **[6]**

c) Why ferrocement is used for pre-casting? Give the different methods of ferrocement pre-casting and explain any one in detail. **[6]**

***Q11)***a) What are different points to be considered in designing and constructing ferrocement cylindrical shell. **[8]**

b) State any four advantages of Ferrocement as precast product. **[8]**

OR

***Q12)***a) Sketch any four forms of folded plates and state assumptions in design of folded plate. **[8]**

b) State four points to be considered while casting precast Ferrocement water tank. **[8]**

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