EASWARI ENGINEERING COLLEGE

BHARATHI SALAI, RAMAPURAM, CHENNAI -89.

DEPARTMENT OF CIVIL ENGINEERING

QUESTION BANK

SUB: CE 2045 PREFABRICATED STRUCTURES SEM: VIII SEM BRANCH: CIVIL

**UNIT I - INTRODUCTION**

**PART – A**

1. Define prefabrication
2. What are the types of prefabricates based on i. Plan area ii Based on weight(MAY /JUNE 2012)&MAY/JUNE 2013
3. What are the types are of prefabricates based on shape? (MAY/JUNE 2012)
4. What is the need for pre fabricates structures
5. What are the Advantages of PFS? (MAY/JUNE 2012) &(MAY/JUNE 2009)& MAY/JUNE 2013
6. What are the disadvantages of PFS? (MAY/JUNE 2012)
7. What are the Production techniques?(NOV/DEC2012)
8. Explain the stand system Production technique
9. Explain the conveyor belt or production line system Production technique?
10. Explain the aggregate system production technique?
11. Explain the Erection procedure of PFS building?
12. What are the aims of prefabrication?
13. What are the characteristics of Materials used for construction of PFS?
14. What is meant by modular co-ordination? (NOV/DEC 2012)& NOV/DEC 2013
15. What are the Advantages of standardization?
16. What are the Factors influencing the standardization?
17. What are the Prefabrication systems?
18. What the Types of system are of prefabricate d construction systems? (MAY/JUNE2012)
19. What are the methods for Manufacture of precast concrete elements (or) types of pre fabrication? (MAY/JUNE 2013)
20. Write short note on Production process
21. Define the term Off-site fabrication
22. List out the limitations of pre-fabrication?
23. What are all the Prefab materials?
24. Write Insulating concrete forms?
25. Write short note on Principles of MC Concept?
26. What are erection stresses?
27. What are the different production techniques adopted in precast construction?
28. List out the precautions taken while erecting precast elements.
29. What are the types of prefabricated components?
30. Explain the term lift slab construction.
31. What are the dynamic stresses induced in the precast panel?
32. What are the criteria in selection of the lifting points if the surface should be free of discernible cracks?
33. What are the factors which affect the loading conditions in demoulding and transport of components?
34. Distinguish between site prefabrication and plant prefabrication.

**PART – B**

1. What are the types and needs of Prefabricates?
2. What are the Production techniques
3. What are the methods for Manufacture of precast concrete elements and explain briefly
4. What is the process involved in manufacture of PFS?
5. What are erection stresses? How are they reduced or eliminated?
6. What are the importance aspects considered during hoisting, erection and transportation of precast element?
7. Explain the need for prefabrication systems.
8. Explain the production process of prefabricated structural elements.
9. Explain necessity of prefabrication in India
10. Discuss in detail the concept of modular coordination .State its significance in prefabricated structures.
11. Discuss the concept of production techniques.
12. List out the principles of prefabricated design.

**UNIT II - PREFABRICATED COMPONENTS**

**PART – A**

1. What are types of Cross wall system?
2. What are the prefabricated structural units?(Nov/Dec2012)
3. What is meant by box type construction?
4. Write brie fly about Types of Wall Panels?
5. What is the classification of precast large panel? (May /June2012)
6. What is the classification of precast concrete walls?
7. What are the types of precast floors?
8. Write about Prefabricated Roofing and flooring elements
9. What is Shear wall? (Nov/Dec2012)& NOV/DEC 2013
10. Define Long Wall System?
11. How are roofing members in prefabricates classified?
12. How are the prefabricated component classified?
13. What are the space bordering?
14. What is the meant by surface forming members?
15. Differentiate between synclastic and Anticlastic?
16. Write a short on dome structure?
17. Define shear wall?
18. Different classification of shear walls
19. What is ring system?
20. What is necessity of dimensional tolerances?(MAY/JUNE 2013)
21. Mention the types of prefabricated structural elements.
22. Give the classification of floor slabs.
23. What are the lateral load resisting elements in a building?
24. What are the types of prefabricated components?
25. Give classification of wall panels.

**PART – B**

1. Classify the structure of building based on the load distribution and briefly explain the different types of such prefabricated building **MAY/JUNE 2012) &MAY/JUNE 2013**
2. Explain the methods of construction of roof and floor slab. Also explain the precautions taken during the manufacturing process. **(MAY/JUNE 2012)& (NOV/DEC2013)**
3. What is the necessity of providing shear walls in the precast structures? Also discuss the different types of shear walls **(MAY/JUNE 2009)**
4. Write briefly about types of wall panels
5. Write briefly about precast concrete columns
6. Write about the structural behavior of precast structure
7. Write briefly large panel construction with neat sketches?
8. Explain the merits and demerits of large panel constructions.
9. Explain the behavior of prefabricated roofs and floor slabs.
10. Differentiate the behavior of frame and large panel construction in precast structures.
11. Discuss about behavior of columns in prefabricated structures.

**UNIT - III DESIGN PRINCIPLES**

**PART-A**

1. What is disuniting of structures? (NOV/DEC2012) & (MAY/JUNE 2012)
2. At what point in the members disuniting should be done?
3. What are the advantages of disuniting of structures?
4. What are the disadvantages of disuniting of structures?
5. Explain joint flexibility? (MAY/JUNE 2012)& MAY/JUNE 2013& NOV/DEC2013
6. Explain joint deformation? (MAY/JUNE 2012)
7. How the material used in construction does affect the design of the element? (MAY/JUNE 2012)
8. What is meant by expansion joints? (MAY/JUNE 2013 & MAY/JUNE 2012
9. Explain dimensional tolerances
10. Write the need for disuniting of structures.

**PART-B**

1. Discuss the necessity of disuniting of structures and explain in detail with sketch(NOV/DEC2012)& (MAY/JUNE 2012)& &MAY/JUNE 2013&(NOV/DEC2013)
2. Explain the problems in design because of joint flexibility. Discuss with regard to various location. (MAY/JUNE 2012) (NOV/DEC2013)
3. Why should we give allowance for joint deformation and explain in detail (MAY/JUNE 2009)
4. What are the precautions taken during the disuniting the structures? (MAY/JUNE 2009)
5. Explain the steps involved in the process of disuniting of prefabricated structures.
6. Explain the steps involved in the design of prefabricated columns based on the efficiency of materials used.
7. What is significance of providing tolerances in precast buildings? Explain the different types of tolerances adopted in precast construction
8. Explain how the material selection impacts the design efficiency of a precast element.
9. Explain the problems in design because of joint flexibility. Discuss with regard to various location.

**UNIT – IV JOINTS IN STRUCTURAL MEMBERS**

**PART-A**

1. What are the importances’s of joints in precast structures when compared to cast- in-situ structures?
2. What is the need for expansion joint in precast structures?
3. What are the connections? (MAY/JUNE 2012)
4. What are the different types of connections?
5. What are the points to be considered while designing the connections?
6. What are the different connections made in a prefabricated structure
7. What are the different types of joints? (NOV/DEC 2012)&MAY/JUNE 2013
8. What are the materials used for concrete joints?
9. Based on the location within a building, how connections can be classified?
10. What are the functions of joints?
11. Write the use of expansion joints.
12. Give any two types of joints in prefabricated structures.
13. What is significance of connections in precast structures?
14. Write note on expansion joint.

**PART-B**

1. Explain expansion and contraction joint in retaining wall. MAY/JUNE 2012
2. What are the essential requirements of joints in precast construction? MAY/JUNE 2012
3. What are the recommendations for the design of an expansion joint? (MAY/JUNE 2009)
4. Give the recommendations for the detailing the precast element in respect of the connections and erection(MAY/JUNE 2009)
5. Explain about column to column connection(MAY/JUNE 2009)
6. Explain about beam to beam connection. (MAY/JUNE 2009)
7. Explain the merits and demerits of expansion joints in prefabricated structures.
8. Explain any two types of beam column joints in prefabricated structures with neat sketches.
9. Give the guidelines recommended for expansion joint design and location.
10. Explain in detail the different structural connection adopted in a framed precast building with sketches.
11. What is the importance of joints in precast structures when compared to cast in situ structures?
12. What is the need for an expansion joint in precast structures?

**UNIT – V DESIGN FOR ABNORMAL LOADS**

**PART-A**

1. What is progressive collapse? (NOV/DEC 2012)& NOV/DEC 2013
2. Define Degree of Progressivity?
3. What are the approaches to avoid progressive collapse?
4. What are the special requirements for building in High Seismic Zones?
5. What are provisions made in a Prefabricated R C floors in a cyclone prone zone?
6. What is strong column weak beam concept?
7. List the possible abnormal effects for prefabricated buildings.
8. Give the formula for design temperature change.
9. How are cyclones formed?
10. What are the different types of seismic waves?
11. Explain equivalent design loads.
12. Explain the importance factor and response reduction factor used in static analysis for the calculation of design seismic force.

**PART-B**

1. Mention in detail the codal provision for considering the effect of earthquake and cyclones. (MAY/JUNE 2012)
2. Explain strong column and weak beam(MAY/JUNE 2012) (MAY/JUNE 2013)
3. When a progressive collapse does occur? Why is it very critical to avoid progressive collapse of structures? (MAY/JUNE 2009)
4. Explain the procedure for calculating equivalent design loads when the structure is subjected to earthquake loading MAY/JUNE 2009)& (NOV/DEC2013) (MAY/JUNE 2013
5. What are the methods to avoid the progressive collapse? Explain each briefly? (MAY/JUNE 2009)& (NOV/DEC2013)
6. Discuss the codal provisions for the design of prefabricated elements subjected to abnormal effects.
7. How are explosive loads different from loads typically used in building design?

 Mrs.G.Prabha/ Mrs.S.Narmadha

Faculty In-Charge HOD/Civil