1. **What is the importance of joints in precast structures when compared to cast insitu structures?**

   In cast insitu structures the joints are provided to relieve the stresses due to temperature and shrinkage and also to accommodate the construction sequence for placement of concrete. But in case of precast structures apart from the above reason we require joints to connect various elements of structures.

2. **What is the need for expansion joint in precast structures?**
   - Expansion joints are necessary in precast structures in order to allow for the expansion and cooling of various members due changing in temperature. In precast structures the shrinkage takes place before the assembling of members, therefore the spacing of expansion joints may be 1.5 to 2.0 times greater than in monolithic structures.
   - The expansion joints are usually formed at the joint of roofing members and main girders.

3. **What are connections?**

   In precast members to overcome operational difficulties the member are disunited into smaller elements. Connections are used to get required structures by joining the separate smaller elements.

4. **What are the different types of connections?**
   - Wet connections (with mortar or insitu concrete)
   - Dry connections (with welding and bolting)

5. **What are the points to be considered while designing the connections?**
   - Loading under working condition
   - Stability of structures
   - Load conditions during construction
   - Effect of shrinkage, creep and temperature
   - Unequal settlements.

6. **What are the different connections made in prefabricated structures?**

   Column to column connections

   Beam to beam connections

   Main beam to secondary beam connections.

7. **What are the different types of joints?**
   - Expansion joints
   - Contraction joints
   - Crack control joints
   - Construction joints

8. What are the materials used for concrete joints?

- Flexible board
- Dowels
- Sealants

9. Based on location within the building how the connections are classified?

- *Vertical joints*

It connects the vertical faces of adjoining wall panels and primarily resist vertical seismic forces.

- *Horizontal joints*

It connects the horizontal faces of the adjoining wall and floor panels and resist both gravity and seismic loads.

10. List the functions of joints?

Joints between internal and external wall panels shall be designed to resist the forces acting on them without excessive deformation and cracking, they shall also be to accommodate the deviations in the dimensions of the wall panels during production and erections.

11. Define joint?

Joint is defined as a desirable for the structure should be load bearing as soon as possible preferably immediately after assembly. It should require only little material and should not be labour observing.

12. What are the requirements of joints?

The forming and construction of joints requires greatly increased control

The design and construction of joints should normalize with the materials to be used.

Joints must be designed and executed to ensure dimensional tolerance.

A relative displacement of the joint member should be impossible.

13. Give the classification of joints?

- *As per dimension tolerance:*

Butt joint, splayed joint, pin joint.

As per function:

Rigid joint, hinge like joint, shod joint.

- *As depending on necessity of insitu concreting:*

Dry joint, wet joint.

14. What is meant by expansion joints?

Expansion joints allow expansion and contraction of a member without generating potentially damaging forces within the member itself or the surrounding structures.

15. State post tensioned connections?

Post tensioned connections can generally be joined for simpler than the usual reinforced concrete structures. In post tensioned structures the forming of joints doesnot cause difficulties. In this all the joints are course rigid and moment bearing.

16. State any two significance of connections?

- Loading under working condition
- Stability of structures.
- Effect of shrinkage, creep and temperature.
- Unequal settlements.