**CE: 332 Design I**

**Quiz** Name : ……………………………. **Full Marks: 25**

**Time : 60 Min.** Roll No……………………………..

Q.1. Maximum size of aggregate in R.C.C. Chajja of 50 mm over all thickness should not be more than ……………………

Q.2. The clear distance between reinforcement is 25 mm and the clear cover to the reinforcement is 35 mm. The maximum size of aggregate should be limited to ……………

Q.3. The tensile strength of M25 grade is …………………

Q.4. The modulus of elasticity of M25 grade concrete is ……………………..

Q.5. For a given humidity and temperature the total shrinkage of concrete is more influenced by ……………….. content at the time mixing rather than …………….. content.

Q.6. Creep coefficient of concrete depends on the …………………….

Q.7. The main characteristic of concrete which influences its durability is ……………….

Q.8. The environmental exposure condition for R.C.C. foundation in B.H.U. campus is …………………………………………………..

Q.9. Nominal mix may be used for concrete grade up to …………………….

Q.10. If the fall of concrete in fresh state is more than 1.5 m, the …………………. will take place

Q.11. The curing period required for OPC is ……………. than PPC

Q.12. The clear span of a cantilever from the face of the support is 2.0m, the support width is 300 mm and the effective depth is 250 mm. The effective span is ………………………….

Q.13. Effective span of a simply supported beam is 16.0 m. The span to effective depth ration for modification factor of one is………………………………….

Q.14. A two way S.S. slab of size 6 m x 4 m is subjected to 10 kN/m u.d.l including its self weight. The total load acting on short wall from slab is ……………………….

Q.15. Effective depth of One Way R.C.C. slab is 150 mm. The maximum spacing of reinforcement in main & transverse direction should be limited to …………………………

Q.16. Minimum area of tension steel in beam of over all size B x D shall not be less than = ………………………………….

Q.17. Maximum area of compression steel in above beam shall not be more than …………………………

Q.18. Minimum diameter of bar in column shall not be less than ……………………

Q.19. The number of longitudinal bars in square column of 600 x 600 overall shall not be less than ………………………….

Q.20. For column of minimum dimension 200 mm and dia of longitudinal bar of 12 mm, the nominal cover may be taken as…………………..

Q.21. The minimum compressive strain in column subjected to moment is 0.001. The maximum compressive strain in it will be = ………………………….

Q.22. Permissible bearing stress of concrete in W.S.M. & L.S.M. for M25 grade concrete are ………………………………………………………………….

Q.23. Permissible shear stress in two way shear for square column in W.S.M. & L.S.M. for M25 grade concrete are …………………………………….

Q.24. Minimum thickness at the edge of R.C.C. footing supported on soil and pile should not be less than …………………………………………….

Q.25.In two way slab shown below mark the middle & edge strip in both directions



Q.26. For same slump and strength, the consumption of cement for maximum aggregate size of 20 mm will be ……………………… than maximum aggregate size of 10 mm

Q.27. Xumax/d for M20 and Fe415 is ---------------------

Q.28. Kbal for M20 and Fe415 is ………………………

Q.29. A rectangular beam of 350x500 mm effective is subjected to Vu where Vc > Vu > .  
10 ø 2 legged stirrups is to be provided. The spacing of the stirrups of Fe415 should not be more than ……………………………

Q.30. 5 # 25 ø bars are to be provided in one layer in a rectangular beam. The maximum aggregate size used in concrete is 20 mm and stirrups of 8 mm dia, the minimum width of beam should be ………………….

Q.31. A S.S. beam of effective span 8.0 m is subjected to 24 kN/m U.D.L. including self weight & it is built into a masonry wall. The B.M. at support will be ………………………….

Q.32. The contribution of bent up bars in shear shall not be more than ………………………….

Q.33. The nominal area of longitudinal reinforcement in pedestal should not be less than………………………………….

Q.34. Effective length of a square column of size 400 mm is 9.60 m The correction factor coefficient for permissible stresses will be ……………..

Q.35. The cross sectional area of longitudinal steel in column shall be in the range of ………………..

Q.36. Effective span of a S.S. beam of clear span 8.0 m , width of support 500 mm and effective depth 600 mm is

(a) 8.30 (b) 8.25 m (c) 8.5 m (d) 8.60 m

Q.37. Maximum compressive strain in concrete in flexure is

(a) 0.0025 (b) 0.0035 (c) 0.0045 (d) 0.0055

Q.38. Modular ratio for M 20 grade concrete is

(a) 11 (b) 12 (c) 13 (d) 14

Q.39. The maximum O.P.C. content in concrete should be limited to

(a) 350 Kg/m3 (b) 450 Kg/m3 (c) 500 Kg/m3 (d) 550 Kg/m3

Q.40. The gray colour of O.P.C. is due to

(a) Silicate (b) Aluminate (c) Ferrite (d) Alkalies

Q.41. The F.O.S. for concrete in bending compression is

(a) 2.5 (b) 3.0 (c) 3.5 (d) 4.0

Q.42. The impermeability of concrete is governed by

1) W-C ratio 2) Curing 3) Cement content 4) compaction

Select the correct answer

(a) 1, 2 & 3 (b) 1, 2 & 4 (c) 2, 3 & 4 (d) 1 to 4

Q.43. The nominal maximum size of coarse aggregate in slab of total thickness D should not be more than

(a) D/4 (b) D/5 (c) D/6 (d) D/8

Q.44. The flexural strength of M25 grade concrete is

(a) 8.5 N/mm2 (b) 6.0 N/mm2 (c) 5.0 N/mm2 (d) 3.5 N/mm2

Q.45. The type of cement which is more suitable for concrete exposed directly along with sea coast is

(a) 53 Grade OPC (b) 33 Grade OPC (c) P.P.C. (d) P.S.C.

Q.46. The ratio of bond stress of deformed bars in compression to tension is

(a) 1.60 (b) 1.40 (c) 1.25 (d) 1.0

Q.47. The ratio of permissible stress I direct compression to bending compression is

a) 3/4 b) 1 c) 5/4 d) 4/3

Q.48. A square column of 200mm x 200 mm consists of 8 bars of 12 mm diameter. The minimum cover in this column shall not be less than

(a) 15 mm (b) 20 mm (c) 25 mm (d) 40 mm

Q.49. Maximum diameter of reinforcement which can be used in slab of overall thickness 200 mm will be

(a) 10 mm (b) 12 mm (c) 20 mm (d) 25 mm

Q.50. For two way continuous slabs of small spans less than 3.5 m with high strength deformed bars, the vertical deflection limits for residential building is assumed to be satisfied provided that the span to deflection are less than

(a) 26 (b) 32 (c) 35 (d) 40