College Code : 769

DEPT: CIVIL ENGG   **YEAR/SEMESTER**: III / V

SUB.NAME: STRUCTURAL ENGG.

Each question carries 1(one) mark in PART-A and 12(twelve) marks in PART-B

UNIT-1

PART-A

1. List out the grades of standard concrete.
2. Define the term characteristic strength.
3. Define modular ratio.
4. State the various type of limit state.
5. What are the partial safety factor for concrete and steel?
6. Specify the size of FA to be used in R.C.C
7. What are the different types of loads?
8. How will you calculate the effective span of a structure with simple supports?
9. What are the requirements breadth and depth of beams?
10. State the expressions for finding tensile?

PART-B

1. A beam of rectangular section 250mm wide, 450mm deep to the center of the tensile reinforcement is provided with 4bars of 18mm dia. Find the ultimate movement of resistance. Use M_{20} and FE250 steel.
2. A beam of rectangular section 250mm wide, 500mm effective depth is reinforced with 4bars of 18mm dia. Find the depth of neutral axis. Assume M_{20} concrete and FE250 steel.
3. Determine the movement of resistance of beam sections of cross section. 230x430mm effective depth ^{d1}=40mm, Asc=402m^{m2}, Ast=1256m^{m2}, Fck= 20N/m^{m2},
4. A Singly reinforced simply supported rectangular beam of 300 mm 500mm effective size is reinforced with 3nos of 18mm diameter fe415 grade steel bars concrete grade m15 is used .It has to carry udl of 10.5kn/m including its self weight in an effective span of 6m check the safety of beam in flexure.
5. Design a cantilever beam of span 3.2m carrying an imposed load of 10kn\m .use m20 grade and fe415 steel grade.