**Rajasthan Institute of Engineering & Technology, Jaipur.**

**II Mid Term examination**

**Session: 2017-18 Set-A**

**VI Semester & CIVIL Branch**

**Subject :- DCS-I**

**Code :- 6CE4A**

Time: 2 hrs. M.M.:20

**Instruction for students:**

1. No provision for supplementary answer book.

2. Attempt all questions.

3. All question carry equal marks.

Q.1 Design a square footing for a column of 400mm\*400mm load on column is 800 KN. Safe bearing capacity of soil is 190 KN/M2. Use M-20 & Fe-415.

 OR

Q.1 Design a circular column of dia 400 mm subjected to load on column is 1200 KN. Use M-25 & Fe-415. Having length of 3 m and effectively held in position at both ends but not restrained against rotation

Q.2 Design the shear reinforcement for a beam width = 250mm d=400mm V= 45KN fck=25N/mm2  & fy=250N/mm2 also the beam is reinforced with 4-22 mm dia bars .

 OR

Q.2 A simply supported beam 300mm\*600mm is reinforced with 5 bars of 25 mm dia.It carries a u.d.l of 80 Kn/m including its self wt. over an effective span of 6 m. Out of the 5 main bars two bars are bent up safely near the supports Design a shear reinforcement. Use M-20 & Fe-415.

Q.3 Design a slab for a room having clear span of 5 m the slab carrying a live load of 5 kn/m2 . Take the width of supported wall as 230mm Use M-20 and Fe-415 .

OR

Q.3 Design a simply supported roof slab of 7.5\*3.5m clear in size. The slab is carrying a live load of 5Kn/m2. Use M-20 & Fe 415 .

Q.4 Design of doubly reinforced beam to carry a live load of 50kN per meter run. The overall depth& width 230mm\*600mm beam has a clear span of 5m.Assume cover as 50 mm Use M-20 & Fe-415.

 OR

Q.4 Design a short reinforced column of a clear span of 4 m long effectively held in position and restrained against rotation at both ends, carries an axial load of 1600 KN . use M-20 & Fe-415.

**Rajasthan Institute of Engineering & Technology, Jaipur.**

**II Mid Term examination**

**Session: 2017-18 Set-B**

**VI Semester & CIVIL Branch**

**Subject :- DCS-I**

**Code :- 6CE4A**

Time: 2 hrs. M.M.:20

**Instruction for students:**

1. No provision for supplementary answer book.

2. Attempt all questions.

3. All question carry equal marks.

Q.1 Design a slab for a room having clear span of 5 m the slab carrying a live load of 5 kn/m2 . Take the width of supported wall as 230mm Use M-20 and Fe-415 .

 OR

Q.1 What do You mean by Helical Reinforcement and Pu –Mu Interaction Curve Explain each

Q.2 Design a square footing for a column of 400mm\*400mm load on column is 800 KN. Safe bearing capacity of soil is 190 KN/M2. Use M-20 & Fe-415.

 OR

 Q.2 A simply supported beam 300mm\*600mm is reinforced with 5 bars of 25 mm dia.It carries a u.d.l of 80 Kn/m including its self wt. over an effective span of 6 m. Out of the 5 main bars two bars are bent up safely near the supports Design a shear reinforcement. Use M-20 & Fe-415.

 Q.3 Design a short reinforced column of a clear span of 4 m long effectively held in position and restrained against rotation at both ends, carries an axial load of 1600 KN . use M-20 & Fe-415.

 OR

 Q.3 Design the doubly reinforced beam to carry a live load of 50kN per meter run. The overall depth& width 230mm\*600mm beam has a clear span of 5m. Use M-20 & Fe-415.

Q.4 Reason the following :

 1. We provide Doubly Reinforced beam.

2. Shear reinforcement is provided.

 OR

Q.4 Short notes on

1. Diagonal Tension 2. Development Length with its codal provisions