SCHOOL OF PLANNING AND ARCHITECTURE, VIJAYAWADA

SEMESTER END EXAMINATIONS (SUPPLEMENTARY) DECEMBER - 2016

B. ARCH III YEAR V SEMESTER

THEORY OF STRUCTURES (TS-5)

Maximum Marks – 100 **Time – 3.00 Hours**

a) Answer any Four out of 1 to7 questions.
b) Question No.8 is compulsory and answer any four out of six sub questions.
c) Code books (i) IS 456:2000 (ii) IS 800:2007 (iii) Steel Tables are allowed.
d) Scientific Calculator is allowed.

Q1. The floor plan of a building is shown in Fig below. The specified floor loading consists of a Live load of 5.0 KN/m^2 and a Dead load of 2.5 KN/m^2 (Exclusive of self weight). Design the slab thickness and reinforcement area required at various sections, using Fe415. Assume that the structure is subjected to moderate exposure conditions. Also show the **(20M)**

Q2. Design the flexural reinforcement in the three span continuous beam with Live Load of 15 KN/m and Dead load of 14 KN/m and the length of each span is 8m. Use M_{20} and Fe415 grade steel. Also show the detailing. **(20M)**

Q3. Design a continuous steel beam of spans 7m, 6m and 7m carrying a uniformly distributed load of 30 KN/m where the beam is supported laterally. **(20M)**

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Q4. Design an R.C.C pile to carry a load of 900 KN. Use M_{20} and Fe415 grade steel. The length of the pile is 4m. Show detailing of R.C.C Pile. **(20M)**

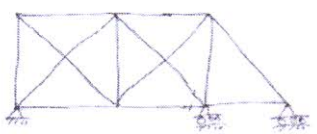
Q5. Explain the classification of Pin-jointed and rigid jointed structures. **(20M)**

Q6. Explain in detail the types of Bearing Capacity failures. **(20M)**

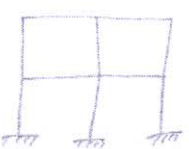
Q7. Explain in detail the types of shallow foundations with neat sketches. **(20M)**

Q8. Write short notes on any FOUR of the following. **(4x5= 20M)**

a) Advantages of steel structures.
b) Code of practice for design loads for buildings and structures for Dead loads, Imposed loads, Wind loads, Snow loads and special loads and load combinations, other than earth quake loads?
c) Testing procedure for RCC beams in laboratory.
d) Determine the static indeterminacy for the figure shown below:



e) Find the degree of kinematic indeterminacy for the figure shown below:



f) Types of hammers used for pile driving.

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