**Symbol of Secularism
& National Integration**

ANJUMAN-I-ISLAM'S

KALSEKAR TECHNICAL CAMPUS, NEW PANVEL

School of Architecture

THIRD YEAR B.ARCH- SEM V EXAMINATION NOVEMBER 2016

Subject: Theory and Design of Structures V.   Max Marks: 50
Date: 03/11/2016   Duration: 2 Hrs.

Note : 1) **Question no. 1 is compulsory**. Attempt any 2 from remaining Q 2 to Q4.

2) Figures to the right indicate full marks.

3) Assume suitable data wherever necessary, and state clearly the same.

4) Use of non-programmable scientific calculators is allowed.

Q 1] Attempt any 4.   [20]

   a) Explain with examples joints and connections in steel structures..
   b) Explain with practical examples choice of different cross sections used in steel structures.
   c) Explain the choice of welding over that of riveting.
   d) Discuss choice of steel structures in reference to climatic conditions.
   e) Explain with a sketch grillage foundation.

Q 2] a) Calculate Shearing and Bearing and tearing Strength for a 25mm dia rivet.   [5]

   b) Calculate the number of Bolts required for a Roof Truss joint, as shown in Fig 1.Connected by 25mm dia bolts to the gusset plate of thickness 10mm.   [10]

Q 3] a) Draw different types of composite sections for Steel Beams.   [5]

   b) Design a Beam 4m long, subjected to factored load of 80KN/M subjected throughout its span.. Both the ends of the beam are effectively restrained in position and direction.
[[10]

Q 4] a) Discuss the types of steel foundations with reference to soil conditions.   [5]

   b) A steel Beam ISLB 300 has a span of 6m and simply supported on strong supports. Find the safe load it can carry.   [10]

Q 5] a) Explain with a sketch what is a Plate Girder.   [5]

   b) Design a Single angle Tension member to carry a factored load of 400 kN, considering steel of grade Fe 410, d= 20mm. Also calculate no. of bolts required.   [10]

[P.T.O.]

50 × 50 × 6
260 KN.

↓ 250 kN   50 × 50 × 6.

280 kN.
2Ls 80 × 80 × 8.

270 kN.
2Ls 80 × 80 × 8

Fig. (1). Q. 2. b.

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Directorate of Technical Education, Govt. of Maharashtra Affiliated to: University of Mumbai

3rd Year B.Arch 04-11-2016 2hours Total Marks: 50 marks Subject: SERVICES

N.B:
1. Question no.1, 7 & 9 are compulsory
2. Attempt any 5 from the remaining 7
3. Draw neat sketches wherever necessary

QUESTIONS

1. Distinguish between Direct Current and Alternating current with proper sketching (3 -4 lines).
   (Compulsory question)   6 Marks

2. Define Earthing and mention types of Earthing.   6 Marks

3. Explain Plate earthing in depth with proper sketches.   6 Marks

4. Explain Cleat wiring and Batten wiring with sketches   6 Marks

5. What is daylight and explain daylight factor?   6 Marks

6. Explain Daylighting with sketches in: Any 1   6 Marks
   a. Hot-dry Climate
   b. Warm-Humid Climate

7. An Office of 10m x 5m requires an Illumination level of 300 lux on a working plane. It is proposed to use a 40 watt fitting having a rated output of 2440 lumens. Design the lighting scheme with Lumen method of lighting design. Draw a reflected ceiling plan for the same and select type of lighting for UF.
   Utilisation factor
   For downward lighting = 0.4 to 0.9
   For diffuse lighting = 0.2 to 0.5
   For indirect lighting = 0.05 to 0.2   8 Marks
   (Compulsory question)

(Continued...)
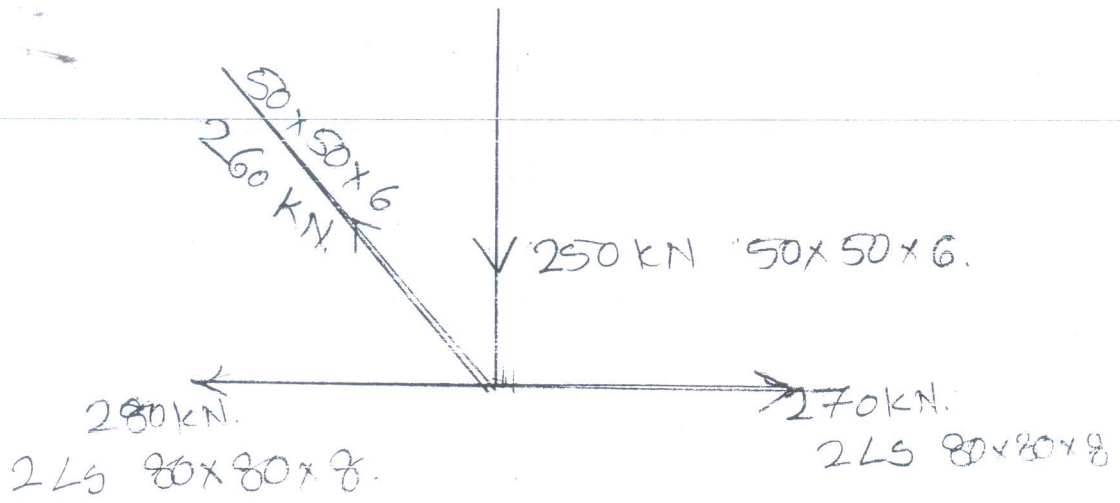
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SEM V B.ARCH EXAMINATION OCT 2016-17

Subject: Humanities   Max Marks: 50

Date: 05 -11-16   Duration: 2 Hrs

Note –

All questions are compulsory you can select between options within the questions

There are two sections to be answered; Section A in infographcis and Section B in text supported by sketches.

This is an open book test students are allowed books, notes and printouts (STRICTLY NO LAPTOPS AND PHONES), however, students are not allowed to discuss or share materials during the exam.

SECTION A..... Infographics (answer on blank side of the sheet) Compulsory

Q1 Discuss the Planning and Development of Bombay...**25mks**

     Include the design and geographical setting of the Forts, the Ports and the Railway line at Bombay in your answer...**10mks**
     Discuss in detail one important building's plans, facades and details from neoclassical, Gothic revival, Indosarcenic, Art Deco styles, **each**....................................**15mks**

SECTION B..... Subjective answers supported by sketches (answer on the side with the name plate)

Q. 2 Discuss the five principles of Architecture by Le Corbusier with the example of a well-known architectural case study..**15 Mks**

Or

Q. 2 Exemplify the Three styles of Architecture at Pondicherry. Discuss the construction style of floors and the climatological implications of all the three designs...............................**15 Mks**

Q. 3 Discuss in detail the architects and their works which shaped the face of Modern India. **10 Mks**

Or

Q. 3 How did industrial revolution influence the idea of Home as a Machine.................**10 Mks**

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THIRD YEAR B.ARCH EXAMINATION 2016-17

Subject: Building Construction-(SEMESTER-V)
Max Marks: 50

Date: 08/11/2016   Duration: 3 Hrs. (10.00A.M to 1.00P.M)

Note – Question number 1 & 2 are compulsory, attempt any one from Q3 & Q4.

Q1. Short notes (any four) sketches are compulsory   **(20 marks)**

    A. Describe failures in RCC structures.
    B. Eccentrically loaded column footing.
    C. Positioning of shear walls
    D. Waterproofing of shear wall
    E. Describe raft foundation and sketch its types
    F. Strap footing

Q2. Draw section of basement for multi-storey RCC building explaining its reinforcement details(scale 1:20)
(15 marks)

Q3. What are canopies? Draw plan and section of steel canopy at 1:20 scale with gutter details . Consider appropriate case for the canopy.   **(15 marks)**

Q4. Draw plan & section of Trapezoidal combined footing explaining its reinforcement details (scale 1:20).
Consider column sizes to be 450mm X450 mm thick and 300mm X 300 mm thick.   **(15 marks)**