AIKTC Sem - II Nov. 17

ANJUMAN-I-ISLAM'S
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL
Approved by : All India Council for Technical Education, Council of Architecture, Pharmacy Council of India New Delhi,
Recognised by : Directorate of Technical Education, Govt. of Maharashtra, Affiliated to : University of Mumbai.
□ SCHOOL OF ENGINEERING & TECHNOLOGY
□ SCHOOL OF PHARMACY
□ SCHOOL OF ARCHITECTURE

FIRST YEAR B.ARCH- SEM II EXAMINATION NOVEMBER 2017

Subject: Architectural Building Construction — Max Marks: 70

Date: 08/11/2017 — Duration: 3 Hrs

Q.4 and Q.6 are compulsory, Attempt any 4 out of remaining.

Write answers in pointers.

Q1. A series of semicircular arches in brick need to be constructed on a span of 1.8m.each. Draft the elevation on appropriate scale. 10M

Q2. Give the details of sill and lintel level in cavity wall. 10M

Q3. An opening of 1.8M width is to be spanned by timber lintel. Give the construction details of the same. 10M

Q4. Explain the following with the help of sketches (Any 4). 20M

A. Extrados
B. Reinforcement in brick lintel
C. Springing line
D. Skewback
E. Built up lintel in timber

Q5. Explain with the help of sketches how moisture in the cavity wall can be drained out. 10M

Q6. A hall of 3.5 M.x 6.0M. needs to be separated by partition.
Design the partition and draft plan and elevation showing construction details on appropriate scale. 10M

Q7. Explain with the help of sketches important features of building envelope with respect to Cold climate and with respect to Warm and Humid climate. 10M

Symbol of Secularism
& National Integration

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School of Architecture

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FIRST YEAR B.ARCH- SEM II EXAMINATION NOVEMBER 2017

Subject: Theory and Design of Structures II. Max Marks: 50

Date: 07/11/2017 Duration: 2 hrs.

Note : 1) **Question no. 1 is compulsory.** Attempt any 3 from remaining four questions.

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) Define stress and explain its different types.
b) State and explain the Flexural Formula with all terms and write their units.
c) Draw and Explain with Examples Centroid, Centre of Gravity and Moment of Inertia.
d) Give the S.I. units of- Shear Force, Bending Moment, Moment of Inertia, Young's Modulus and strain.
e) Explain what are Shear force diagrams (SFD) and Bending Moment Diagrams (BMD).

Q 2] a) Find the Centroid of the cross section Resultant shown in Fig 1. [4]

b) Find the Moment of Inertia I_{xx} and I_{yy} of the fig shown in Fig 1. [6]

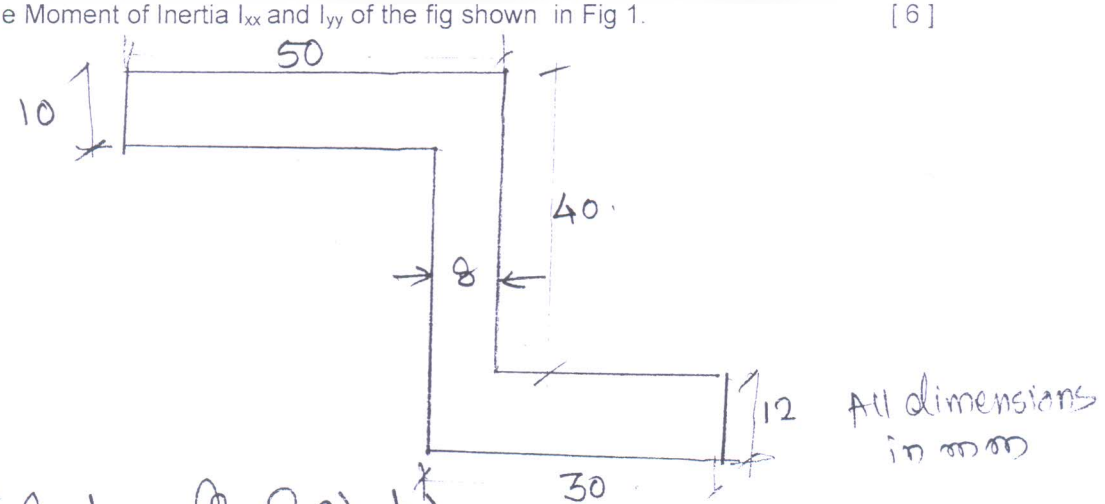

Fig 1. Q 2a), b)

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Q 3] a) Explain Bulk Modulus, volumetric stain and Shear strain. [2]

b) Write the values of Modulus of Elasticty (E) of timber, steel & concrete [3]

c) A steel rod 100cm long and of 20mmx20mm cross section is subjected to a pull of 10 KN. Find the stress ,strain and the elongation of the rod. [5]

Q 4] Analyze the Beam shown in Fig 3. and draw SFD and BMD. [10]

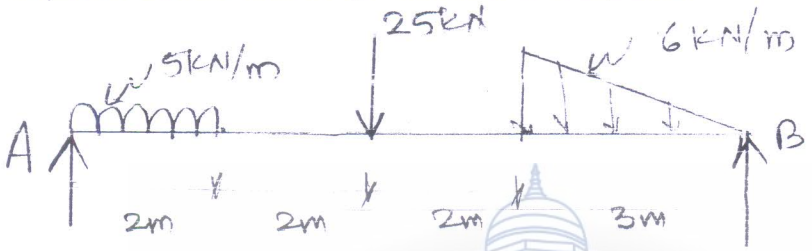

Fig. 3 Q. 4

Q 5] a) Draw the Deflected profiles of the Beams shown in Fig .4 [4]

b) Analyze the Beam shown in Fig 5 and draw SFD and BMD [6]

Fig. 4. Q 5 a

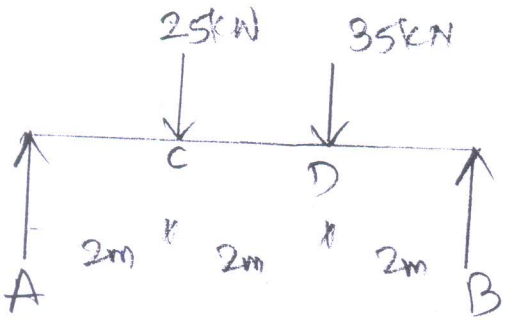

Fig. 5 Q. 5 b)