

Set 01



ANJUMAN-I-ISLAM'S
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL
School of Engineering & Technology

Subject: Applied Hydraulics-II
Marks: 30

Feb-14

Date: **TEST-1**
Class: T.E (SEM-VI)

Duration: 01 Hr
Branch: Civil

- Instructions:**
- 1) Question No. 1 is compulsory
 - 2) Attempt any two out of remaining three questions
 - 3) Assume any additional data if required

Q.1 Attempt following (10 Marks)

- a) Derive the conditions for the most economical trapezoidal channel section to carry maximum discharge. (4)
- b) Find the dimensions of most economical trapezoidal section to carry a discharge of 15 m³/s if longitudinal slope of channel bottom is 1 in 1250 and Manning's constant $N = 0.015$ take side slope as 1H:1V. (3)
- c) Define uniform flow, non uniform flow, gradually varied flow and rapidly varied flow (3)

Q. 2. Attempt following (10 Marks)

- (a) Derive an expression for the discharge through channel by Chezy's formula. (5)
- (b) The depth of flow of water at a certain section of a rectangular channel of 2 m wide is 0.4 m. The discharge through the channel is 1.8 m³/sec. Determine whether hydraulic jump will occur? and if so find the height and loss of energy per Kg of water of the jump. (5)

Q. 3. Attempt following (10 Marks)

- (a) In a rectangular channel of 0.5 m wide a hydraulic jump occurs at a point where depth of water flow is 0.15 m and Froude number is 2.5 determine (5)
 - i) The specific energy
 - ii) The critical depth and subsequent depths
 - ii) Loss of head
 - ii) Energy dissipated.
- (b) Explain specific energy diagram with its significance. (5)

Q.4 Attempt the following (10 Marks)

- a) Derive an expression for critical depth, critical velocity and minimum specific energy in terms of critical depth (5)
- b) In a rectangular channel of width 24 m and depth of flow 6 m, the rate of flow of water is 86 m³/s. If the bed slope of the channel is 1 in 4000. Find the slope of the free water surface. Take Chezy's constant $C = 60$. (5)



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Subject : EE-I Date : 21/02/14
Marks : 20 Duration : 1 Hrs.
Class : TE *sem VI* *EE-I* Branch : Civil

Instructions:

- 1) Question No. 1 is Compulsory.
- 2) Attempt any One question out of remaining Two Questions.
- 3) Assume any data if required & state them clearly.

Q1. A) Write a short note on food chain & food web. (05)
b) Explain why planned water supply schemes are required? (05)

Q.2 Explain Physical & Chemical characteristics of water. (10)

Q.3 Explain in detail factors affecting Per Capita Demand (10)

OR

Explain various ecosystems & its importance.

Prof. D.S.Shah

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ANJUMAN-I-ISLAM'S
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School of Engineering & Technology

Subject: Design and Drawing of Steel Structures Date: 22.02.2014 (2.30pm)
Marks: 30 Max Duration: 1.30 Hr.
Class: T.E. (Civil) Sem:- VI *VT-I* Branch: Civil Engg

- Q.1 a) Explain advantages and disadvantages of steel as construction material. (05)
b) Draw any five rolled steel sections with name. (05)
- Q.2 *Solve Any TWO*
- a) Explain the terms Gross section yielding and Block Shear failure of tension member (10)
- b) A tie member of truss girder is 250mm X14mm in size, it is welded to 10mm thick gusset plate by fillet weld, the overlap of the member is 300mm and weld size is 6mm, determine design strength of the joint, as the welding is done as shown in fig. What is increase in strength if the weld is don all around. Assume shop welding. (10)
- c) Two framing Angle ISA 150x150X10mm are used are used to make beam to column connections, one angle is placed on either side of the web of the beam as shown in fig. three bolts of 16mm dia and 4.6 grade are used to connect the angle leg to the beam. Determine the reaction that can be transferred through the joints.
- ISHB 300 @618.03 N/m $t_f = 10.6\text{mm}$
ISMB 350 @514.04 N/m $t_w = 8.1\text{mm}$ (10)
- (To Refer FIG P.T.O.)



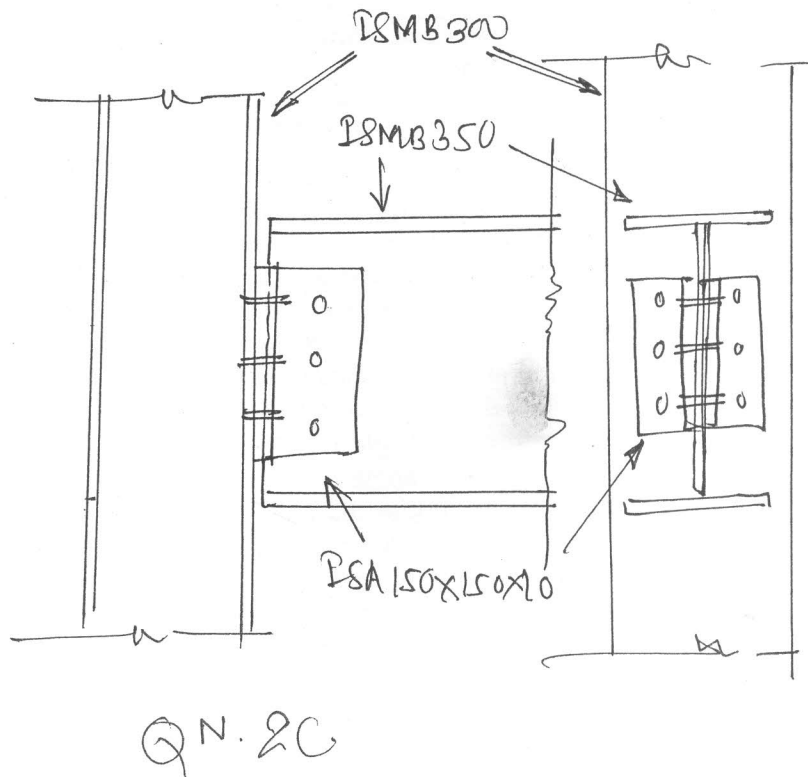
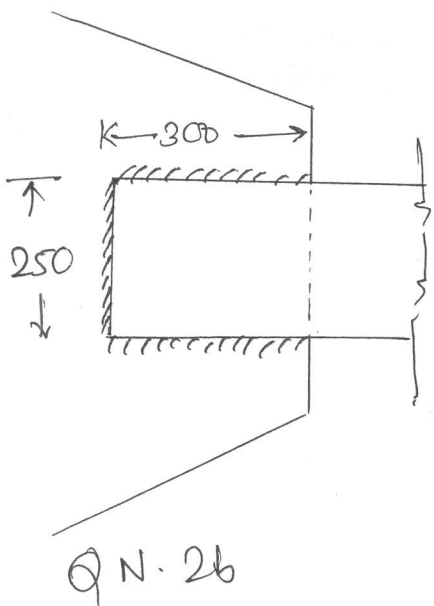
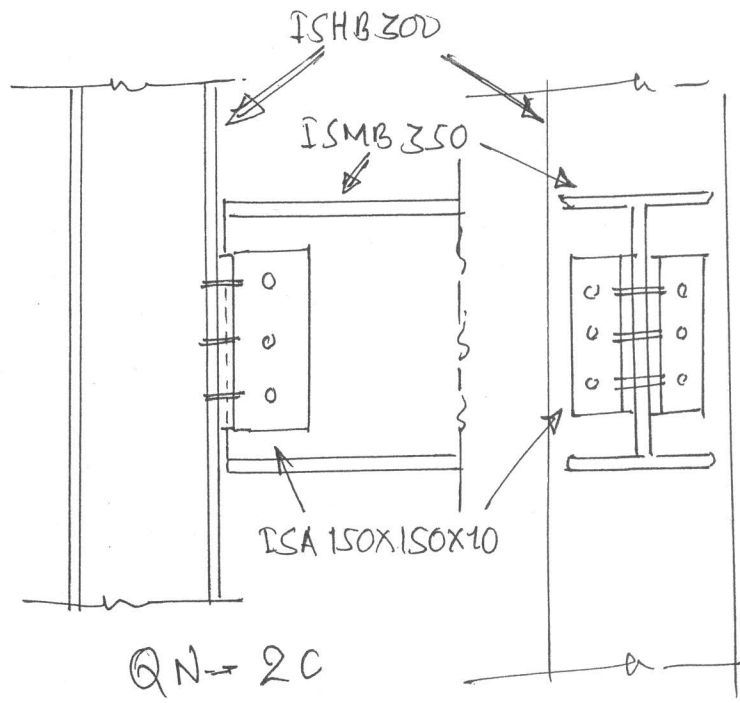
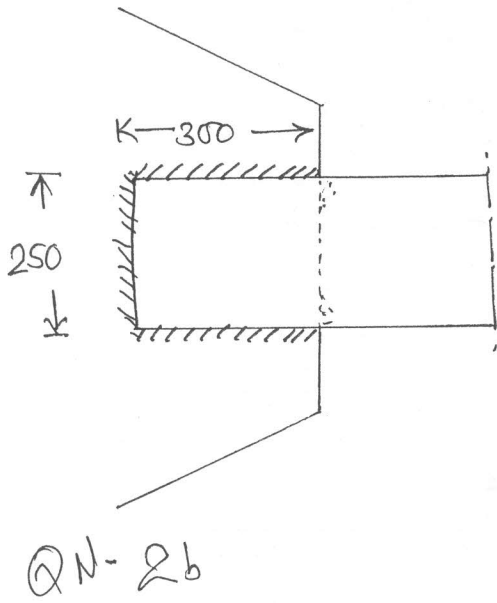
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ANJUMAN-I-ISLAM'S
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School of Engineering & Technology

Subject:	Transportation Engineering	Date: 21.02.2014 (10.30am)
Marks:	30 Max	Duration: 1.00 Hr.
Class:	T.E. (Civil) Sem:- VI	Branch: Civil Engg

UT-I

- Q.1 a) What are the various requirements of an ideal highway alignment? (04)
b) Enumerate the factors governing the width of carriage way. State the IRC specifications for width of carriage way for various classes of roads? (05)
- Q.2 *Solve Any Three*
- a) Enlist various types of classifications of roads in India. (07)
b) What are the salient features of Roman roads? Explain with sketch. (07)
c) Explain briefly role of transportation in society. (07)
d) Discuss Salient features of Nagpur Road Plan (07)
e) What is SSD? Derive formula for the same at slopes. (07)



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School of Engineering & Technology

Subject:	Transportation Engineering	Date: 21.02.2014 (10.30am)
Marks:	30 Max	Duration: 1.00 Hr.
Class:	T.E. (Civil) Sem:- VI	Branch: Civil Engg

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Symbol of Secularism
& National Integration

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Marks: 30

Date: **TEST-1**
Class: T.E (SEM-VI)

Feb-14

Duration: 01 Hr
Branch: Civil

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**ANJUMAN-I-ISLAM'S
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Subject: TRCPC

Marks: 30

Date: 22/02/2014

Duration: 1 hr(10:30-11:30)

Class : TYCE(SEM VI) UT-I

Branch : Civil

UNIT TEST: 1

N.B. (1) Q No. 1 is Compulsory [10 Marks]

(2) Attempt any two questions from Q No. 2 to 4 [10 Marks]

1. (a) What are the assumptions in working stress method?
(b) Explain why high strength steel & concrete are required in prestressed concrete.
(c) What are the advantages of prestressed concrete over R.C.C.?
2. Determine the area of tensile reinforcement required in a R.C.C beam 230mm * 450mm subjected to bending moment of 30KN-m. Use M20Fe415.
3. Derive the expressions for neutral axis depth constant, lever arm constant and moment resistance factor constant for a balanced section.
4. A cantilever beam of 5m span carries a u.d.l. of 25KN/m inclusive of its self weight. Design the beam for flexure, if it is reinforced in tension only. The width of beam is half the overall depth. The materials are M20Fe415