Set 01

Unit Test I
2013-14
(Sem V)

Symbol of Secularism & National Integration

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

Subject: **Entrepreneurship & Management** — Marks: **30**

Date:07/09/2013 — Duration: **1 hr(2:30-3:30)**

Class :**TYCE(SEM V)** — Branch : **Civil**

N.B. (1) Q No. **1 is Compulsory**
(2) Attempt **any two** questions from **Q No. 2 to 4**

1. "Selecting one best form of business ownership is like looking for a shirt that may fit everybody in the family". Elaborate **[10]**

2. **Answer in brief (Any 2)** **[5 * 2]**
   (a) Discuss in brief the socio-economic origins of entrepreneurship.
   (b) Enlist different classifications of entrepreneurship. Give the classification according to type of business.
   (c) What are Small Scale Industries? Describe a few industries in the small-scale sector that are suitable for Civil Engineering fields.

3. **Write short notes on(Any 2):** **[5*2]**
   (a) Government policies promoting entrepreneurship
   (b) Aspects of entrepreneurship
   (c) Motivation Techniques

4. **Write short notes on(Any 2):** **[5*2]**
   (a) Entrepreneurial culture
   (b) Problems and barriers responsible for failure of entrepreneurs
   (c) Characteristics of an ideal entrepreneur.

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Subject: AH-1 **Marks: 30**
Date: 06/09/13 **Duration: 1 hr**
Class : TYCE (SEM V) **Branch : Civil Engg.**

Q1. Attempt **any two** **[10M]**

a) Draw general layout of hydroelectric power plant & explain the various components.

b) Explain various efficiencies of turbine.

c) A jet of water of dia.75mm strikes a fixed plate normally with a velocity of 25m/s in such a way that angle between jet and plate is 60°. Find the force exerted by the jet on the plate

(1) in the direction normal to the plate

(2) in the direction of jet

Q2. Solve **any two** **[20M]**

(a) A rectangular plate weighing 58.86N is suspended vertically by a hinge on top horizontal edge .The centre of gravity of the plate is 10cm from the hinge. A horizontal jet of water 2cm dia. whose axis is 15cm below the hinge impinges normally on the plate with a velocity of 5m/s.Find the horizontal force applied at the centre of gravity to maintain the plate in its vertical position. Find the corresponding velocity of the jet, if the plate is deflected through 30° and the same force continues to act at the centre of gravity of the plate.

(b) A jet of water having a velocity of 40m/s strikes a curved vane, which is moving with a velocity of 20m/s.The jet makes an angle of 30° with the direction of motion of vane at inlet and leaves at an angle of 90° to the direction of motion of vane at outlet. Draw the velocity triangles at inlet ant outlet & determine vane angles.

(c) The penstock supplies water from a reservoir to the Pelton wheel with a gross head of 500m. 1/3rd of the gross head is lost in friction in the penstock. The rate of flow of water through the nozzle fitted at the end of the penstock is 2m^3/sec. The angle of deflection of the jet is 165^0. Determine the power given by water to the runner and hydraulic efficiency. Take speed ratio = 0.45 and C_v= 1.0

6/9/13
TYCE (Sem V)
Sub: AH-I.
(2013-14)

is 600 kJ /kg. If the air passing through the turbine looses 30 kJ/kg of heat to the surrounding, determine the power developed, in MW, by the system.

3. A domestic food freezer maintains a temperature of -15 °C. The ambient air temperature is 30°C. If the heat leak rate into the freezer is 1.50 kJ/s, What is the minimum power necessary to keep the freezer operating?

4. An engine working on Carnot cycle has maximum pressure and temperature as 800 kPa and 1000 K. it uses 0.05 kg of air. The heat added during the cycle is 4.5 kJ. The minimum pressure and temperature of cycle is 100 kPa and 310 K. Determine the output of the engine and maximum cylinder volume required.

5. Two Carnot engines work in series between a source at 550 K and sink at 350 K. If both engines develop equal power, determine the temperature of intermediate reservoir. Also find the change in Entropy of universe due to working of both Engines.

OR

600 kW of heat is supplied at a constant temperature of 291 °C to a heat engine. The heat rejection takes place at 9°C. The following results were obtained:

i) 430 Kw heat rejected
ii) 300 Kw heat rejected
iii) 150 Kw heat rejected

Using Clausius inequality, classify which of the result report reversible, irreversible and impossible cycles.

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Unit Test I
2013-14
(Sem V)

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

Subject: B.D.D.-II **Date: Aug 1, 2013**
Marks: 40 **Duration: 1Hr. 30 Min.**
Class: TE **Test: 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**.

Q.1) It is proposed to construct a **municipal hospital** in Thane district. **(20)**
For G+1, Framed structure, the requirements are as follows:-

Ground Floor level:-

a) Entrance lobby	:Min 5 m wide
b) Reception, enquiry counters with Administrative office	:25- 30 sq. mt.
c) Consulting rooms 4 Nos.	:10- 12 sq. mt.
d) Pathology Lab.	:50 sq. mt.
e) Radiology Lab.	:50 sq. mt.
f) Minor O.T.	:50 sq. mt.
g) Emergency unit	:50- 60 sq. mt.

First floor level:-

a) Male ward 10 beds	:100 sq. mt.
b) Female ward 10 beds	:100 sq. mt.
c) Kitchen	:30 sq. mt.
d) Store	:30 sq. mt.
e) Canteen	:50-60 sq. mt.

Provide sanitary units, passages, staircase as per by laws. **Draw G.F.** Plan.

Q.2) a) Draw the line plan of the **first floor** of building given in **Question No.1** **(10)**

b) Draw the Front elevation of building given in **Question No.1** **(10)**

Q.3) a) Explain the principles of planning & designing of school building. **(10)**

b) Draw to scale line plan of Prinicipal's office of an Engg. College. **(10)**
Following are the requirements:-

a) Reception-cum-waiting area
b) Principal room.
c) Conference room with attached W.C.
d) Office

Assume suitable sizes for each unit.

********** End **********

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Unit Test I
2013-14
(Sem V)

ANJUMAN-I-ISLAM'S
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School of Engineering & Technology, 2013-2014

Subject: Structural Analysis-II | **Date: 5/9/13**
Marks: 30 | **Duration: 01 Hr**
Class: TE | **Branch: Civil**

Instructions: 1. Question No. 1 is **COMPULSORY.**
2. Answer any **TWO** from the remaining.
3. Each full question carries **EQUAL MARKS.**

1) A) Determine the static & kinematic indeterminacies for fig. 1. (04 M)
B) Find the vertical deflection of C for rigid jointed frame of fig. 2. (06 M)

2) For 2-hinged parabolic arch of fig. 3, find support reactions, radial shear & normal thrust, BM at 5 m from A. (10 M)

3) Analyse the continuous beam of fig. 4 & draw SFD & BMD. Use slope-deflection method. (10 M)

4) A 2-hinged parabolic arch of span 20 m & central rise 5 m carries a point load of 20 kN at the crown. Assume that the MI of arch varies as the secant of inclination of arch axis i.e. $I = I_0 \sec\theta$. Find the support reactions & draw BMD for the arch. Strictly, **integration method** is to be followed. (10 M)

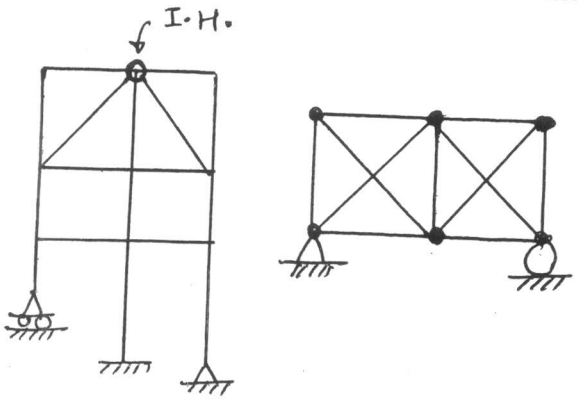


FIG-1

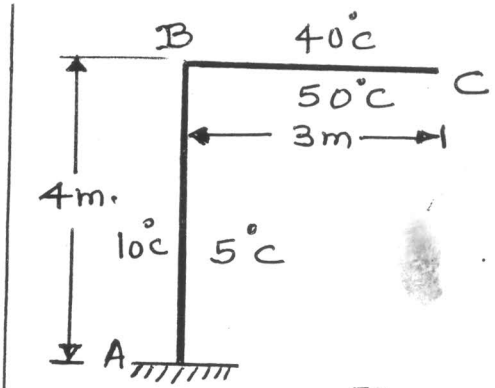
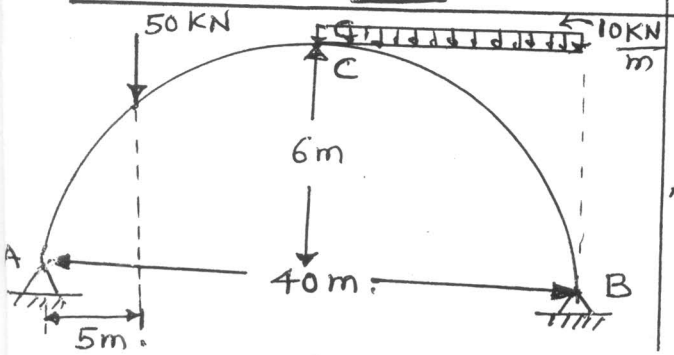
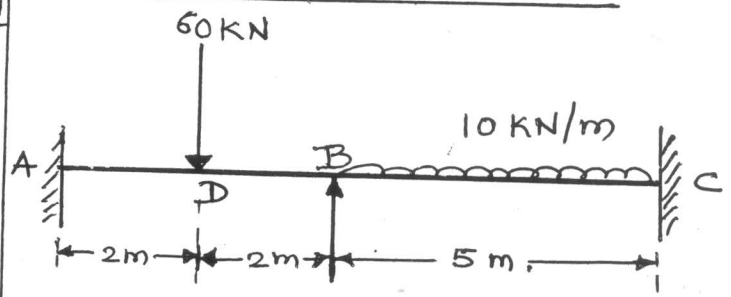


FIG-2





Unit Test I
2013-14

Symbol of Secularism & National Integration

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

Subject: Transportation Engineering – I **Date: 07-09-2013**
Marks: Thirty **Duration: One Hour**
Class: T. E. **Branch: Civil Engineering**

Instructions:
1. Q. No. 01 is compulsory
2. Attempt any two from the remaining questions.
3. All main questions carry equal marks

Q. 1.
a) Explain the importance of transportation infrastructure in overall development. (04 marks)
b) Comment on the planning and coordination of different modes of transportation for Indian conditions. (03 marks)
c) Enlist the merits and demerits of rail transport. (03 marks)

Q. 2.
a) Give a detailed account of different types of railway gauges. (06 marks)
b) Explain the problems due to non-uniformity of gauges. (04 marks)

Q. 3.
a) Draw a neatly labelled sketch with dimensions showing the cross-section of a BG double line in cutting on a straight track. (07 marks)
b) Describe any one rail fastening with the help of a labelled sketch and dimenions. (03 marks)

Q. 4.
Write short notes on any two of the following (2 x 5=10 marks)
a) Transition curves
b) Gradients and its types
c) Design of turnout
d) Creep of rails

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