

Set-03



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

Subject: BMC

Date: 06/09/13

Class : SYCE (SEM III)

Unit Test I

Marks: 20

Duration: 1 hr (12pm to 1pm)

Branch : Civil Engg. (2013-14)

Q1. Attempt any two

10M

- (a) Compare load bearing with framed structure.
- (b) Explain physical and chemical properties of materials.
- (c) Explain different types of mortar used for construction activities.

Q2.

10M

- (a) What are the constituents of cement? Explain in detail manufacturing process of cement.

OR

- (b) Explain various types of laboratory tests on cement in detail with neat sketches.

# Unit Test : 1



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

Subject: Surveying-1

Date: 05/09/13

Class : SYCE (SEM III)

N.B. (1) Q No. 1 is Compulsory

(2) Attempt any one question from Q No. 2 & 3

Unit Test I

Marks: 20

Duration: 1 hr (12pm to 1pm)

Branch : Civil Engg. (2013-14)

Q1. Answer in brief (ANY 3):

12M

- Define Surveying. Explain the fundamental principles on which the art of surveying is based.
- Differentiate between surveyors and prismatic compass.
- During the process of chaining, you come across a pond. Describe how will you continue the line with chain only?
- Give a list of sources of errors in chain surveying and say which of them are cumulative and which of them are compensating.

Q2. Solve

8M

- A base line AC was measured in two parts along two straight drains AB and BC of lengths 1650m and 1819.5m with a steel tape which was exactly 30 metres at 25°C at a pull of 9 N. The applied pull during measurement of both parts was 200 N, whereas respective temperatures were 45°C and 25°C. The slopes of drains AB & BC were 3° and 3°30' and the deflection angle of BC was 10° right. Find the correct length of baseline if the c/s area of tape was 2.5mm<sup>2</sup>. The coefficient of expansion and modulus of elasticity of tape material were 3.5 × 10<sup>-6</sup> per 1°C and 2.1 × 10<sup>5</sup> respectively

Q3. Solve

8M

- A closed compass traverse ABCD was conducted round a lake and the following bearings were obtained. Determine which of the stations are suffering from local attraction and give the values of the corrected bearing.

AB	74°20'	256°00'
BC	107°20'	286°20'
CD	224°50'	44°50'
CA	306°40'	126°00'

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

Subject: Strength of Materials

Date: 8 Sep 13

Marks: 20

Duration: 01 Hr/s

Class: SE (Sem III)

Test: I

Branch: Civil (2013-14)

**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)** Attempt any **two** of the following. ( 5X 2=10)

- a) Derive the relation for extension of Tapering Rod.
- b) A brass bar having cross-sectional area of 1000 mm<sup>2</sup> is subjected to axial forces as shown in fig. 1. Find total change in length of the bar.  
Take  $E = 1.05 \times 10^5 \text{ N/mm}^2$

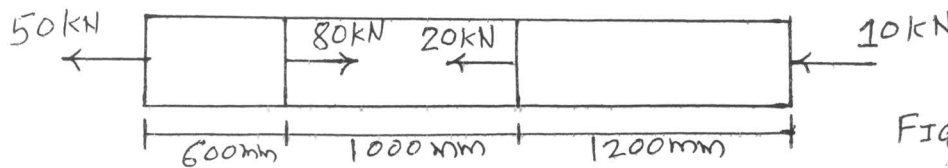


FIG. NO. - 1.

- c) Draw the S.F. & B.M. diagrams for the beam loaded as shown in fig. 2

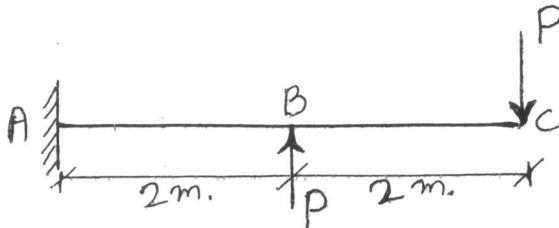


FIG. NO. - 2.

**Q.2)** Attempt any **one** of the following ( 10x1=10)

- a) A compound tube consisting of steel tube 150 mm internal dia. & 10 mm thick & outer tube of brass 170 mm internal dia. & 10 mm thick. The two tubes are of the same length. The compound tube carries an axial load of 1000 kN, find the stresses & load carried by each tube & amount it shortens. Length of each tube is 150 mm. Take  $E_s = 2 \times 10^5 \text{ N/mm}^2$  &  $E_b = 1 \times 10^5 \text{ N/mm}^2$ .
- b) A simply supported beam ABC with supports at A & B, 6 meters apart & with an overhang BC 2 meters long carries udl of 15 kN/m over the whole length. Draw S.F.D. & B.M.D.

**Q.3)** Attempt any **one** of the following ( 10x1=10)

- a) A steel bar is placed between two copper bars. Every bar is having same length & area at 150C. At this stage they are rigidly connected together at both ends. When temperature is raised to 3150C, the length of bars increases by 1.5 mm. Determine the original length & final stresses in the bars.  
 $E_s = 2.1 \times 10^5 \text{ N/mm}^2$ ;  $E_c = 1 \times 10^5 \text{ N/mm}^2$ ,  
 $\alpha_s = 0.000012 \text{ per } ^\circ\text{C}$   $\alpha_c = 0.0000175 \text{ per } ^\circ\text{C}$
- b) A beam 5 m long, supported at the ends carries point loads of 140 kN, 60 kN & 80 kN at distances 0.5 m, 2.5 m & 3.5 m respectively from left end. Draw SFD & BMD.

\*\*\*\*\* End \*\*\*\*\*

DSSHAH



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KALSEKAR TECHNICAL CAMPUS, NEW PANVEL  
School of Engineering & Technology

Subject: Fluid Mechanics-I

Marks: 20

Date: 07/09/13

Class: S.E (SEM-III)

TEST-1

Duration: 01 Hr

Branch: Civil (2013-14)

- Instruction: 1) Question No. 1 is compulsory  
2) Attempt any one out of remaining two questions

Q.1 Attempt following

(12 Marks)

- Define specific weight and specific gravity and write units (2)
- What is Newtonian and Non Newtonian Fluids. State example of each type (2)
- Define capillarity and surface tension (2)
- Define Total pressure and centre of pressure (2)
- Convert 10.3 m of water head into pressure intensity of KN/m<sup>2</sup> (2)
- Define Buoyancy and centre of Buoyancy (2)

Q.2 Attempt the following

(8 Marks)

- Calculate the capillary effect in mm in a glass tube 4 mm diameter when immersed in (a) water (b) mercury. Both the liquids are at 20 °c and the values of the surface tensions for water and mercury at 20 °c in contact with air are respectively 0.0836 N/m and 0.65 N/m. Contact angle for water = 0° and for mercury = 134° (4)
- The right limb of the simple U tube manometer containing mercury is open to the atmosphere while left limb is connected to the pipe in which a fluid of specific gravity 0.85 is flowing. The centre of pipe is 12 cm below the level of mercury in the right limb. Find the pressure of fluid in the pipe if the difference of mercury level in the two limbs is 18 cm. (4)

Q.3. Attempt the following

(8 Marks)

- State and prove Pascal's Law (4)
- An isosceles triangular plate of 3 m base and 3 m height is vertically immersed in oil tank such that its base is a depth of 5 m below the free surface of oil. The vertex being below the base. The specific gravity of oil is 0.85. Determine total pressure and centre of pressure. (4)

Rongu  
27/08/13



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

Subject: Engineering Geology Unit Test I Date: 7/9/13  
Marks: 20 Duration: 1 Hr/s  
Class: SE (Sem III) Branch: S.E. Civil (2013-14)

- Instructions:**
1. Question No. 1 is **compulsory**
  2. Attempt any 3 questions out of remaining 4 questions.
  3. Assume **suitable** data where **necessary**. State them **clearly**.
  4. Figures to the **right** indicate marks

1. Identify the mineral with the help of given physical properties. (5)

	Form	colour	Lustre	hardness	cleavage
(a)	Prismatic crystals	colourless	vitreous	7	absent
(b)	Bladed	blue	pearly	4-7	Present
(c)	Rhomb shaped	white	vitreous	3	rhombohedral
(d)	Tabular crystals	flesh coloured	pearly	6	present
(e)	Foliated	black	pearly	2.5-3	perfect basal

- (2) Define the following terms. (5)

- |                               |                   |
|-------------------------------|-------------------|
| (a) Mohorovicic Discontinuity | (b) Geology       |
| (c) Weathering                | (d) Seismic waves |
| (e) Dyke                      |                   |

- (3) Name the geological agent responsible for the formation of the following features, also mention whether it is an erosional or depositional feature. (5)

- |                |                   |
|----------------|-------------------|
| (a) Ventifacts | (b) Pedestal rock |
| (c) Cirques    | (e) Delta         |
| (g) Eskers     |                   |

- (4) (a) Draw a neat diagram explaining interior of the earth. (5)  
(b) What are the products of volcano?

- (5) (a) What is an inequigranular texture? (5)  
(b) Name various forms of igneous rocks.