

**Course: ESM-231- Strength of material**

**Assignment No: 1**

**Submission Date: 10 November 2016**

**Instructions:**

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD with in the due date.
3. Write your name ,programme and enrollment number clearly at the top of the Pages

**Q.1**

a) A load of 10 kN is to be lifted with the help of steel wire of length 2 m .Find the minimum diameter of the steel wire if the permissible stress is limited to  $100 \times 10^6 \text{ N/m}^2$ . Also determine the elongation of steel wire when stressed to its permissible limit.  $E = 200 \text{ kN/mm}^2$

b) A round copper rod,550 mm long, has a diameter of 30 mm over a length of 200 mm, a diameter of 20 mm over a length of 200 mm and a diameter of 10 mm over its remaining length. Determine the stresses in each section and elongation of rod when it is subjected to a pull of 30 kN. Take  $E = 100 \text{ kN/mm}^2$

**Q.2**

a) A rod 2 m long is at a temperature of  $10^0\text{C}$ . Find the expansion of the rod if the temperature is raised to  $80^0\text{C}$ . If the expansion is prevented, find the stress in the material. Take  $E = 2 \times 10^6 \text{ kg/cm}^2$  ,  $\alpha = 12 \times 10^{-6}/^0 \text{C}$ .

b) A steel rod of length 4 m and diameter 20 mm is being stayed between two plates at a temperature of  $60^0 \text{C}$ . Find out the force exerted by the rod after it has been cooled to  $20^0 \text{C}$  if the plates do not yield.

Take  $E_s = 2 \times 10^6 \text{ kg/cm}^2$  ,  $\alpha_s = 12 \times 10^{-6}/^0 \text{C}$ .

**Course: ECE-232-BUILDING MATERIAL & CONSTRUCTION**

**Assignment No: 1**

**Submission Date: 10 November 2016**

**Instructions:**

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD with in the due date.
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**Q.1**

- a) What are clays? How they are formed in nature? Describe the main characters of chief groups of clay?
- b) Explain with the help of neat sketch and working of any two kilns?

**Q.2**

- a) What are the steps involved in manufacturing of bricks?
- b) What are the main components of building material?

**Course: EFM-233-Fluid Mechanics**

**Assignment No: 1**

**Submission Date: 10 November 2016**

**Instructions:**

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HOD within the due date.
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Q:1-

- a. What is capillarity? Derive the expression for the capillary rise and capillary fall.
- b. Calculate the density, specific weight and weight of one litre of petrol of specific gravity= 0.7

Q:2-

- a. Write a short note on:-
  - i. Specific gravity
  - ii. U-Tube manometers
  - iii. Newton's Law of viscosity.
- b. State and prove the Pascal's Law.

**Course: ECE-234-SURVEYING--1**

**Assignment No: 1**

**Submission Date: 10 November 2016**

**Instructions:**

1. Write the responses to the assignment in your own handwriting.
2. Submit the responses to your HoD within the due date.
3. Write your name ,program and enrollment number clearly at the top of the pages.

**Q.1**

(a) Explain the different types of tapes used in survey along with their advantages and disadvantages?

(b) Differentiate between the surveyor compass and prismatic compass.

**Q.2**

(a) Define following:

- i. Bubble
- ii. Compound lens
- iii. Automatics lens

(b) What are the different sources of error in theodolite work?

**Course: EIS-235-Industrial Sociology**

**Program: B.Tech III Sem(All Branch)**

**Submission Date: 05 November 2016**

**Assignment No: 1**

**Instructions:**

1. Write the assignment in your own handwriting.
  2. Submit assignment to your concerned faculty (Dr. Soma Das) within given time.
  3. Write your name, programme, course, roll no. and enrollment number clearly at the separate sheet.
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1.
    - (a) Discuss concept of industrialization.
    - (b) Define the factory System.
  2.
    - (a) Discuss various scope of Industrial Sociology.
    - (b) Make a comparison between Industrial Sociology and Economics.

**COURSE: - EEM-236 ENGINEERING MATHEMATICS-III**

**Assignment No-1**

**Date of submission:-10.11.2016**

**Instructions**

- a) Write the response to the assignment in your own handwriting.
- b) Submit the response to your HoD within the due date.
- c) Write your name, Programme and Enrolment No. clearly at the top of the page.

Q.1

- a) If  $f(z)$  is a harmonic function of  $z$ , show that

$$\left\{ \frac{\partial}{\partial x} |f(z)| \right\}^2 + \left\{ \frac{\partial}{\partial y} |f(z)| \right\}^2 = |f'(z)|^2$$

- b) Use residue calculus to evaluate the following integral.  $\int_0^{2\pi} \frac{1}{5-4\sin\theta} d\theta$

Q.2

- a) By contour integration, prove that  $\int_0^x \frac{\sin mx}{x} dx = \frac{\pi}{2}$

- b) fit a straight line to the following data

X	0	1	2	3	4
Y	1.0	2.9	4.8	6.7	8.6