J S University

# Assignment For Diploma in Civil Engineering 3rd Sem.

The Assignment will consist of two parts, A and B. Part A will have 5 short answer questions(40-60 words) of 4 marks each. Part B will have 2 long answer questions of 10 marks each

**All questions are compulsory.**

These Assignments should be completed and submitted in written form by the student to his/her respective Faculty/ Examiners. Assignment Submission Dates are:

**List Of Suggested Questions**

The list of suggested questions are for students to practice. Although optional, we recommend that students solve these questions, as they will help them in preparing for exams as well as in clearing the important concepts of the subject.

**List of Practical and suggested practical's**

The list of practical's should be done by the students in their Lab Sessions. These are the basic practical's, which each student should be able to do himself independently. While the list of suggested practicals are optional, but it is recommended that students should perform those practical so as to have a thorough knowledge of the subject

**Education Delivery Schedule (EDS)**

As per University Semester scheme, the minimum contact hours of each paper has been Divided into two hours theory and practical class.
The faculty will maintain this attendance paper wise for his/her batch.

| Subject code | Subject name |
|---|---|
| **DEM-31** | Ele.Elect.& Mech. Engg. |
| **DME – 51** | Strength of materials |
| **DCE-31** | Hydraulics |
| **DCE-32** | Public health engg- |
| **DCE-33** | Surveying-1 |

# J S UNIVERSITY

## Cover page of Assignment

ID NUMBER ……

NAME ……

COURSE Diploma Engineering

STREAM Civil……

SEM 3rd ……

SUBJECT CODE ……

SUBJECT NAME ……

**Assignments will be completed by the Student in his/her own handwriting.**

# Ele.Elect.& Mech. Engg.

## SEC A

**Q 1** Explain what is meant by stand still reactance of induction motor rotor ? How does it vary with speed ?

**Q 2 G**ive reasons for low efficiency of hysteresis and reluctance motors.

**Q 3** What is advantage of a capacitor start motor over a resistance split phase motor ?

**Q 4** What is damper winding ? What is the function of it and where it is located ?

**Q 5** What is a distributed winding and what is distribution factor ?

## Sec B

**Q 1** Attempt allof the following. Write short notes on :

(a) Power flow diagram of an induction motor.

(b) Cause of low power factor of induction motors.

(c) Torque slip characteristics of induction motor.

(d) Cause of hunting and its prevention.

(e) Synchronizing an alternator with bus bars.

(f) Synchronous condensers.

# Hydraulics

## SEC A

1. What do you understand by "Flow in open channel" ? Explain.
2. What is a specific energy curve ? Derive an expression for critical depth and critical velocity.
3. Find an expression for loss of energy head for a hydraulic jump.
4. Describe critical depth, critical velocity, specific energy and specific force.
5. Describe the classification of flow in open channels. What is specific speed ? Derive the equation for specific speed of a turbine.

## Sec B

**Q.6.** The depth of flow of water, at a certain section of a rectangular channel 4 m wide, is 0.5 m. The discharge through the channel is 16 m3/sec. If a hydraulic jump takes place on the downstream side, find the depth of flow after the jump

**Q.7.** A rectangular channel 9 m wide discharges water at normal depth 3.65 m. The bed slope is 1 in 4000 and Manning's n = 0.017. A dam placed downstream raises the level to a height of the profile to 6.8 m immediately behind the dam. Determine the length of the profile by single step.

# Strength of material

## Assignment

### SEC A

**1.** State the relationship between Young's modulus of elasticity (E) and Bulk modulus (K),

**2.** State the relationship between E and modulus of rigidity.

**3.** In two separate experiments, Young's modulus (E) and Bulk modulus (K) of a material have been determined as 120 GPa and 100 GPa respectively. Calculate the Poisson's ratio (v) and Modulus of rigidity (G).

4 Explain the main causes of bending in the columns.

5. A rectangular beam of cross-section 6 cm x 4 cm is 2 m long and simply supported at the ends. It carries a load of 1 kN at midspan. Determine the maximum bending stress induced in the beam.

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### Sec B

**1**. A rectangular beam 100 mm wide and 150 mm deep is subjected to a shear force of 30 kN.

Determine :

(i) Average shear stress

(ii) Maximum shear stress

**2.** Write short notes on the following :

(i) Resilience

(II) Strain energy

(iii) Impact loading (iv) Spring

# Surveying -1

## Assignment

### SEC A

1. What are the stages involved in quantity surveying ?Elaborate each stage in brief.
2. What are the functions of each column of take off sheet.? Give example.
3. Describe the temporary adjustments of theodolite.
4. Discuss the basic principle of traverse survey. Also describe various types of traverse.
5. Derive an expression for the horizontal distance (D) of a vertical staff from a tachometer, if the line of site of the telescope is horizontal.

### Sec B

**Q 1** Write short notes on any seven of the following :

(a) Line of collimation

(b) Swinging of telescope

(c) Transiting (d) Degree of curve

(e) Super elevation or cant (f) Transition curve

(g) NAVSTAR (h) E.D.M. (i) Total station

(j) Closing error

# Public Health Engg-2

## PART-A

Q1 - Define any four of the following:

(a) Chemical Hazards

(b) Stress management (c) Environment

(d) Health Monitoring (e) Confined space standard

Q2- What are the main causes of water pollution ? How can water pollution be controlled ?

Q3- What is occupational stress ? What are the causes and impact of stress at work place ?

Q4- Explain the principle of health protection and care of occupational health and safety.

Q5- What do you understand by the term "Occupational diseases" ? Explain the different factors causing them.

## PART-B

**Q1-** Describe various methods of mitigating electrical fires in an industryr How prior training can help to prevent human and material losses during accidents ?

**Q2-** What is medical surveillance ? What is the purpose, type and pre-requisites of medical surveillance ?