Sai Nath University

Assignment For B.TECH 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:

- ➢ Nov-17

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
BTCE-301	Mathematics 3
BTCE-302	Water and Waste Watering Engineering
BTCE-303	Hydraulics
BTCE-304	Transportation Engineering
BTCE-305	Surveying
BTCE-306	Practical

SAI NATH UNIVERSITY

Cover page of Assignment

ID NUMBER ....

NAME ....

COURSE B.Tech.........

STREAM Civil...................................

SEM 3ST...

SUBJECT CODE ....

SUBJECT NAME ....

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

BTCE-301
Mathematics-3
Part A

1. Find the local maximum and local minimum, if any, for the function

F(x)=sinx+cosx, 0<x<π/2.

2. Find points at which the tangent to the curve $y=x^3-3x^2-9x+7$ is parallel to x-axis.

3.Derive the derivative :-

(a) $y= sin(logx^2+9x+1)$

(b)$y = sinx^{cosx}+cosx^{sinx}$

4. Differentiate $\frac{(3x2+2x+5)}{\sqrt{x}}$

5. Find the first and second partial derivative od $z=x^3+y^3-3axy$.

Part B

1. $\int_0^a \frac{x^7}{\sqrt{a-x^2}^2}dx$

2.Form the differential equation of the family of curves represented by the equation $(2x+a)^2+y^2=a^2$.

BTCE-302
Water and Waste Watering Engineering

Part A

1. What do you mean by permanent wilting point? Explain briefly?

2. Explain with the help of diagram the hydrologic cycle?

3. a. Discuss in brief merits & demerits of various types of dams?

b. Explain for how do you account for earthquake effects in the design of a gravity dam?

4. What are the function of irrigation water?

5. What are the method of computing run-off from a catchments area?

Part B

1. Discuss in brief various types of arch dam?

2. Explain with help of a diagram the various components parts along with their function of diversion head work?

BTCE-303
Hydraulics

Part A

1. What is the difference between ideal fluid and real fluid?
2. Write the condition where the inverted U-tube differential manometer is used.
3. Distinguish between laminar flow and turbulent flow?
4. What do you understand by priming of centrifugal pumps?
5. What is a multi stage pump?

Part B

1. How will you find out co-efficient of contraction experimentally?
2. With the help of a neat sketch, describe the working of a Pelton wheel.

BTCE-304
Transportation Engineering

Part A

1. What are the objectives of highway planning?

2. Bring out the salient features of Nagpur Road Plan.

3. Explain the functional classification of highways as per Nagpur Plan.

4. What are desire lines? Explain Road side interview method of organizing OD studies.

5. How do you determine the flakiness index of road aggregates? What are the prescribed limits of flakiness index for the road aggregates given by IRC?

Part B

1. Explain various factors influencing pavement design.

2. What are the various types of flexible pavement failures? Explain briefly.

BTCE-305
Surveying

Part A

1. What is ranging? What are the methods of ranging a survey line?

2. Explain the principles of surveying? With a simple sketch state the construction and use of a cross staff.

3. Discuss the various obstacles in chaining and Explain the different method of ranging with neat sketch

4. Explain with neat sketches the different types of compasses.

5. Describe the various accessories used in plane table surveying?

Part B

1. What is a two point problem and three point problem? How it is solved.

2. Explain the different types of levels and staves with neat sketches.

BTCE-306
Practical

Part A

1. What are the fundamental parts of a theodolite?

2. What are the fundamental lines in a theodolite?

3. What is meant by size of a theodolite? Whats it?

4. What is tangential system of tachometry?

5. Whats meant by direct angles? How it is measured with theodolite?

Part B

1. What is closing error? How it is adjusted?

2. What are the different methods for balancing the traverse?