J.S University

Assignment For B.TECH in electronic and communication 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	
BEC 1	ENGG MATHMATICS 3	
BEC2	NETWORK ANALYSIS AND SYNTHESIS	
BEC3	FUNDAMENTAL OF ELECTRONIC DEVICES	
BEC 4	SIGNAL AND SYSTEM	
BEC 5	SWITCHING THEORY AND LOGIC DESIGN	
BEC 6	INDSUSTRIAL PSYYCHOLOGY	
BEC 7	HUMAN VALUE	

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Cover page of Assignment

ID NUMBER	
NAME	
COURSE	B.TECH
STREAM	EC
SEM	^{3RD} SEM
SUBJECT CODE	
SUBJECT NAME	

MATHS 3

Part A

Part A

- 1. Show that cot2xcotx cot3xcot2x cot3xcotx=1
- 2. What is Simpson's 1/3rd rule and Simpson's 3/8 th rule? Explain with example ?
- **3.** 3.Expand the Determinant

2	4	5
6	2	1
3	4	2

		3	1	3
4. F	Find inverse of matrix	5	1	4
		2	3	7

5. Expand $(2x+5)^{5}$ by the Binomial Theorem

Part B

- 6. How many different words can we make using the letters A, B, E and L?
- 7. Resolve 1/(x+1)(x+2) into partial fraction

NETWORK ANALYSIS AND SYNTHESIS

part a

1 QUS EXPLAIN KVL AND KCL WITH SUITABLE EXAMPLE?

2 QUS WHAT IS SUPERPOSITION THEOREM EXPLAIN WITH EXAMPLE?

3 QUS FIND THE CURRENT AT R3 USING SUPERPOSITION THEOREM IN GIVEN FIGURE



4 QUES STATE AND PROOF THE MAXIMUM POWER TRANSFER THEOREM

5 QUS FIND THE CURRENT AT R2 USING THEVNIN THEOREM



1 QUS APLLY NORTON THEOREM IN GIVEN FIGURE AND FIND CURRENT ACROSS 10 OHM



2 QUS .EXPLAIN CURRENT DEVIDER AND VOLTAGE DEVIDER RULE WITH EXAMPL?

FUNDAMENTAL OF ELECTRONIC DEVICES

Part A

- 1. **1 qus**. What is the Difference between voltage and power amplifier?
- 2. 2 qus. Describe the Classification of power amplifier class A, B and C?
- 3. 3 qus. What is the working of Heat sinks in power amplifiers?
- 4. 4 qus what is the advantage of Push-pull amplifier:?
- 5. 5 qus. What is Tuned Voltage Amplifier?

6. **Part B**

- 7. 1 qus what is positive and negative feedback and their need?
- 8. 2 qus. Write the short note on Emitter follower and its applications?

ASSIGNMENT FOR B.TECH 6TH SEM ELECTRICAL ENGINEERING

SIGNAL AND SYSTEM

Part A

1) Determine whether the following discrete-time signals are periodic, and if they are, specify the fundamental period.

a) $x(n) = cos(\pi n/2)$ $sin(\pi n/8) + 3cos(\pi n/4 + \pi/3)$ b) $x(n) = 3cos(5n + \pi/6)$

- 2) An analog signal $x_a(t) = sin(480\pi t) + 3sin(720\pi t)$ is sampled 600 times per second.
 - a) Determine the Nyquist sampling rate for $x_a(t)$ and the folding frequency.
 - b) What are the frequencies, in radians, in the resulting discrete time signal x(n)?
 - c) If x(n) is passed through an ideal D/A converter, what is the reconstructed signal $y_a(t)$?
- 3) What is the benefits of digital signal processing ?
- 4) Write the properties of fourier transform?
- 5) (Marks = 4) Compute y(n) for an LTI system where the input and impulse response are given by a) x(n) = {1, 2, −1}, h(n) = x(n).
 b) h(n) = (1/2)ⁿu(n), x(n) = u(-n)

part B

- 6) (Marks = 4)
 - a) Determine the range of values of the parameter a for which the LTI system with impulse response h(n) is stable. The impulse response if given as follows

$$h(n) = a^n, \qquad n \ge 0, \text{ n even}$$

- b) Three systems with impulse responses $h_1(n) = \delta(n) \delta(n-1)$, $h_2(n) = h(n)$ and $h_3(n) = u(n)$ are connected in cascade. What is the impulse response $h_c(n)$ of the overall system? Simplify as much as possible.
- 7) For each of the following signals, determine whether they are (1) linear/non-linear; (2) time invariant/time varying; (3) causal/non-causal; (4) stable/unstable.
 - a) y(n) = Round[x(n)], where Round[x(n)] denotes the integer part of x(n) obtained by round-ing.
 - b) y(n) = x(n) + nx(n+1)

SWITCHING THEORY AND LOGIC DESIGN

<u>PART A</u>

1 QUS DESIGN HALF ADDE AND FULL ADDER USING LOGIC GATES

2 What you mean by weighted code?

3. Add the following BCD numbers.

01100111 + 01010011.

4. What are the universal gates? Why they are called universal gate?

5. Simplify the following Boolean functions, using four-variable maps:

a) F(w, x, y, z) = ∑ (1, 4, 5, 6, 12, 14, 15)

b) F(A, B, C, D) = ∑ (0, 1, 2, 4, 5, 7, 11, 15)

part B

1. draw the circuit diagram of J K flip flop with NAND gate with positive edge triggering and explain its operation with the help of truth table ?

2. write merits and demerits of PROM? convert excess 3 code to BCD using full adder circuit ?

BTIP 31 [INDUSTRIAL PSYCHOLOGY] PART A

1) write the definition and scope of industrial psychology

2) explain the stress management

3) write the brief information of leadership

4) what is job analysis

5) explain the performance and management training

part b

1) what is reliability and validity recruitment test

2) what is scientific and human relation

BTAC 31

[HUMEN VALUE AND PROFESSIONAL ETHICS] PART A

- 1) EXPLAIN GUIDLINE CONTENT FOR PROCESS VALUE EDUCATION
- 2) WHAT IS THE SELF EXPLORATION
- 3) EXPLAIN METHOD OF FULLFILED THE HUMEN ASPIRATION
- 4) WHAT IS THE HARMONY OF HUMEN BEING
- 5) WHAT IS THE NEED OF SELF

PART B

- 1) WHAT IS THE NATURAL ACCEPTANCE OF HUMEN VALUE
- 2) CASE STUDY OF TYPICAL HOLISTIC TECHNOLOGIES