

**B. TECH. (SEMESTER II) EVEN SEMESTER
MINOR EXAMINATION (2): 2021-22
Engineering Economics**

Time: 1 Hrs.

Max. Marks: 20

Note: Attempt all questions.

Q.1. Attempt any two parts of the following. Q.1 (a) is compulsory.

~~(a)~~ Explain short run and long run cost function including total cost curve, Average cost curve and Marginal cost curve. 6

~~(b)~~ Write short note on:

(i) Production Function

(ii) Opportunity Cost 4

(c) Total cost curve and Total variable cost curve do not start from same point. Explain 4

Q.2. Attempt any two parts of the following. Q.2 (a) is compulsory.

(a) Differentiate between Perfect competition and Monopolistic competition market on the basis of following: 6

(i) Nature of the product

(ii) Price influence

(iii) Relationship of AR and MR

(iv) Demand Curve

(b) Define Gross domestic product, Gross National product and Net National product. What is the importance of the national income analysis? 4

(c) In which type of market structure, price differentiation is possible and Why? 4

Sub Code-BCS-154

Roll No.

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B. Tech.
Year: I Semester: II SEM
Test-II (Examination): 2022
BASICS OF PROGRAMMING SKILLS

Time: 1 Hr.

Max Marks: 10

Note: Attempt ALL questions. ALL questions carry equal marks.

Q1.	Attempt any Two parts of the following. Q. 1 (a) is compulsory.	Marks	CO	BL	PO	PI Code
a)	Write a program in C to multiply 3*3 matrices	3	CO5	L3	PO2	2.5.1
b)	What is Array and describe different type of array with example.	2	CO5	L2	PO2	2.6.1
c)	Write a C program using function to exchange two no. using pointers.	2	CO5	L2	PO2	2.6.4
Q2.	Attempt any Two parts of the following. Q. 2 (a) is compulsory.					
a)	Write a program in C NAND gate (Using if-else).	3	CO6	L2	PO2	2.5.2
b)	Difference between Structure and Array.	2	CO6	L3	PO2	2.5.1
c)	Write the difference between Microprocessor and Microcontroller.	2	CO6	L3	PO2	2.6.1

BL – Bloom's Taxonomy Levels (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 – Creating)

CO – Course Outcomes

PO – Program Outcomes

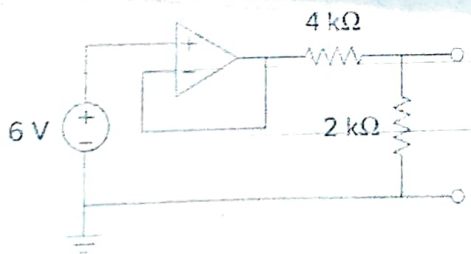
PI Code – Performance Indicator Code

B. Tech.
Year: 1st Semester: 2nd
Minor Test-II (Examination): 2021 - 2022
Fundamentals of Electronics Engineering

Time: 1 Hr.

Max Marks: 10

Note: Attempt ALL questions. ALL questions carry equal marks.

Q1.	Attempt any Two parts of the following. Q. 1 (a) is compulsory.	Marks	CO	BL	PO	PI Code
a)	Define FET and illustrate three different methods of biasing using proper circuit diagram.	3	1	3	1	2.1.3
b)	Draw the constructional details of n-channel depletion mode MOSFET and state its working principle.	2	1	2	2	1.3.1
c)	i. Find the minimized Boolean expression of this function $F=XY+X(Y+Z)+Y(Y+Z)$. ii. Find the canonical POS form of $Y= A+B'C$.	2	2,3	3,5	2	2.1.3
Q2.	Attempt any Two parts of the following. Q. 2 (a) is compulsory.					
a)	What is the power absorbed by the 4-k Ω & 2-k Ω resistor below? 	3	1,4	3,4,5	2	2.1.3
b)	Write down at least 4 major real-life applications of Op-amp. Explain its importance in each sector of application.	2	4	2,4	2	2.1.2
c)	Enlist the performance parameter of digital voltmeter. Explain the importance of performance parameter "speed of the reading" in DVM.	2	6	2,4	1	1.3.1

BL – Bloom's Taxonomy Levels (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)

CO – Course Outcomes

PO – Program Outcomes

PI Code – Performance Indicator Code

Sub Code: - BEC-152

Roll No.

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B. Tech.

Year: I, Semester: II

Test-II (Examination): 2021-2022

FUNDAMENTALS OF COMMUNICATION SYSTEMS

Time: 1 Hr.

Max Marks: 10

Note: Attempt ALL questions. ALL questions carry equal marks.

Q1.	Attempt any Two parts of the following. Q. 1 (a) is compulsory. (Unit-I)	Marks	CO	BL	PO	PI Code
a)	State and discuss the sampling theorem. Define the terms Nyquist sampling rate and Nyquist interval and find these terms for the following signal. i. $\sin(8\pi \times 10^3 t)$ ii. $\cos(8\pi \times 10^3 t) \times \cos(2\pi \times 10^3 t)$	3	CO4	1,2	1,3	1.3.1
b)	State the advantage of pulse modulation over carrier wave modulation. Explain PAM, with the help of suitable waveforms.	2	CO4	1,3	1,2	1.3.1
c)	What is multiplexing? Why is it needed? Differentiate between TDM & FDM.	2	CO5	1,4	1	1.3.1
Q2.	Attempt any Two parts of the following. Q. 1 (a) is compulsory. (Unit-II)					
a)	Define the term noise. What are the different types of noise in signal? What is the effect of noise on signal performance?	3	CO5	1,5	1,3	1.3.1
b)	i. Explain the term signal to noise ratio (SNR) and figure of Merit (FOM) with its mathematical expression.	2	CO5	1,2	2	1.3.1
	ii. What are the features of 5G? What are the advantages & disadvantages of 5G over 4G?		CO6	1,2	2	1.3.1
d)	Explain CDMA and its features. Compare GSM & CDMA technology.	2	CO6	1,4	2	1.3.1

BL – Bloom's Taxonomy Levels (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analysing, 5 – Evaluating, 6 - Creating)

CO – Course Outcomes

PO – Program Outcomes

PI Code – Performance Indicator Code

Vn (1.3.1.1)

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B. Tech.
(SEM II) EVEN SEMESTER
TEST-2 (EXAMINATION) 2021-22
Human Values & Professional Ethics-1

Time: 1 Hr.

Max. Marks: 20

Note: Answer all questions

Q.1 Attempt any Two parts of the following. Q. 1(a) is compulsory.

- ~~(a)~~ Define Ethics and explain its origin, meaning, and nature. 6
- ~~(b)~~ How would you judge whether a human action is subject to ethical enquiry or not? 4
- (c) What are the various divergent views that exist on the linkages of religion and ethics? 4

Q.2 Attempt any Two parts of the following. Q. 2(a) is compulsory.

- (a) What are the important elements of Professional Ethics? 6
- (b) What are the basic principles that guide activities covered under Corporate Social Responsibility? 4
- (c) What are the basic tenets of IEEE Code of Ethics for Engineers? 4

Sub Code: BSM-104

Roll No.

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B. Tech.

Year: I Semester: II

Test-II (Even Semester 2021-22)

Title of Subject: Ordinary and Partial Differential Equations

Max Marks: 20

Time: 1 Hr.

Note: Attempt ALL questions. ALL questions carry equal marks.

Q1.	Attempt any Two parts of the following. Q. 1 (a) is compulsory.	Marks	CO	BL	PO	PI Code
a)	i. Solve, the PDE $x^2(y-z) + y^2(z-x)q = z^2(x-y)$. ii. Solve the PDE: $r + s - 6t = y \sin x$.	6	2,6	3	1	1.1.1
b)	Use Charpit's method to find the complete integral of following P.D.E: $z^2 = pqxy$.	4	2,6	3	1	1.1.1
c)	i. Eliminate the arbitrary function f from $z = f\left(\frac{xy}{z}\right)$ and form the partial differential equation. ii. Define integral surface of the PDE and obtain the singular integral of the PDE $z = px + qy + \sqrt{p^2 + q^2}$	4	4,6	2/3	1	1.1.1
Q2.	Attempt any Two parts of the following. Q. 2 (a) is compulsory.					
a)	i. Solve the following P.D.E. by the method of separation of variable: $u_x = 2u_t + u$ with $u(x, 0) = 6e^{-3x}$. ii. A tightly stretched string with fixed end points $x = 0$ and $x = l$ is initially in a position given by $y = a \sin \frac{\pi x}{l}$. If it is released from rest from its position, find the displacement $y(x, t)$.	6	5,6	3	1	1.1.1
b)	Solve $\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0$ which satisfies the condition $u(0, y) = u(l, y) = u(x, 0) = 0$ and $u(x, a) = \sin\left(-\frac{n\pi x}{l}\right)$.	4	5,6	3	1	1.1.1
c)	An initially long uniform plate is bounded by two parallel edges and an end at right angle to them. The breadth is π , the end is maintained at a temperature 100°C at all points and other edges are at 0°C . Find the state temperature.	4	5,6	3	1	1.1.1