Shri Shankaracharya Institute of Professional Management & Technology
Department of Electronics and Telecommunication Engineering
Class Test – I Session- Jan. – June, 2020 Month- February
Sem- ET&T 4th Subject- Numerical Analysis Using C - 328451(28)
Time Allowed: 2 hrs Max Marks: 40

Note: - ***Attempt any 5 question. All questions carry equal marks.***

Q. NO.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Describe various data types used in C. Illustrate their declaration and usage with appropriate example.	[8]	Understanding	CO1
2.	Write a program to design a menu driven calculator using switch case statement.	[8]	Apply	CO1
3.	Write a program to find the Armstrong number	[8]	Apply	CO1
4.	Write a program to find greatest of three numbers	[8]	Apply	CO1
5.	Apply Bisection method and find value of $\sqrt[3]{10}$ correct upto 3 places of decimals.	[8]	Apply	CO1
6.	Applying Regula – Falsi method, find the smallest positive root of $x^2 - \log_e x - 12 = 0$, correct upto three decimal places.	[8]	Apply	CO1
7.	Apply Newton – Raphsons method, find a root of the equation $x \sin x + \cos x = 0$,which is near $x = \pi$ correct upto 6 places.	[8]	Apply	CO1
8.	Write a program to verify whether the number is palindrome or not.	[8]	Apply	CO1

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Shri Shankaracharya Institute of Professional Management & Technology
Department of Electronics and Telecommunication Engineering
Class Test – I Session- Jan. – June, 2020 Month- February
Sem- ET&T 4th Subject- Electromagnetic Fields & Transmission Lines- 328456(28)

Time Allowed: 2 hrs Max Marks: 40

Note: - ***Attempt any 5 question. All questions carry equal marks.***

Q. NO.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Express the vector $\vec{B} = \frac{10}{r}\overrightarrow{a_r} + r\,cos\theta\overrightarrow{a_\theta} + \overrightarrow{a_\phi}$ in cylindrical co-ordinate system.	[8]	Apply	CO1
2.	Two point changer Q1=2 n C & Q_2=4 n C are located at (1.1.1) & (1.0.0) respectively. Determine the potontail at P (1.1.0) due to the point change:	[8]	Apply	CO1
3.	Prove that the electric field due to a uniform infinite line change is given ny $\vec{E} = \frac{P_L}{2\pi\rho r}\hat{a}_r$ v/m	[8]	Understanding	CO1
4.	Three uniform infinite sheets of change are located in free space as follows: (i) 3 nC/m^2 at z=-4 (ii) 6nC/m^2 at z=1 (iii) -8nC/m^2 at z=4 Find $\vec{E}$ at points: (a) P_A(2,5,-5) (b) P_B(4,2,-3) (c) P_c(-1,-5,2) (d) P_D(-2,4,5)	[8]	Apply	CO1
5.	Find electric field due to infite sheet change.	[8]	Understanding	CO1
6.	A Line change density of 24 nC/m is located in free space on the line y=1, z=2. (a) Find $\vec{E}$ at P(6,-1,3) (b) what point change Q should be located at Q (-3,4,1) to couse Ey to be equal to zero at P.	[8]	Apply	CO2

Shri Shankaracharya Institute of Professional Management & Technology
Department of Electronics and Telecommunication Engineering
Class Test – I Session- Jan. – June, 2020 Month- February
Sem- ET&T 4th Subject- Electromagnetic Fields & Transmission Lines- 328456(28)

Time Allowed: 2 hrs Max Marks: 40

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SHRI SHANKARACHARYA INSTITUTE OF
PROFESSIONAL MANAGEMENT AND TECHNOLOGY
CLASS TEST – I (Feb-2020)
ET 4th Analog Communication

Duration: 2 Hours | Max. Marks: 40

Unit -1 (Ques 1 and 2 are Compulsory,carries 2 marks each. Attempt any 2 from the remaining 3 Questions carries 9 marks each)

Q-1- Define Modulation Index.
Q-2- Define Selectivity and Sensitivity of a Receiver
Q-3- Explain the Phase Discrimination method for the generation of SSB Signal
Q-4- Explain Superheterodynereceiver with Block Diagram
Q-5- A given AM broadcast station transmits a total power of 50 kW when the carrier is modulated by a sinusiodal signal with a modulation index of 0.707. Calculate

a) The carrier power
b) The transmission efficiency
c) The peak amplitude of the carrier assuming the antenna to be represented by a (50+j0)Ω load

Unit-2 (All Ques are Compulsory. Q-1 carries 3 Marks and rest of them carry 5 Marks each)

Q-1 Give the Standard Equation of following

a) AM Signal
b) PM Signal
c) FM Signal

Q-2- Give the Relationship between PM and FM. Give block diagram of generating a FM from PM and Viceversa

Q-3- A single tone FM is represented by $v(t) = 12\ Cos(6x10^8t + 5\ sin\ 1250t)$
Determine the following

a) Carrier Frequency
b) Modulating Frequency
c) Modulating index
d) Maximum Deviation
e) What power will this FM wave dissipate in 10 Ω resistor

Q-4- Explain the generation of Narrow Band FM and Derive its Expression

SHRI SHANKARACHARYA INSTITUTE OF
PROFESSIONAL MANAGEMENT AND TECHNOLOGY
CLASS TEST – I (Feb-2020)
ET 4th Analog Communication

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SHRI SHANKARACHARYA INSTITUTE OF PROFESSIONAL MANAGEMENT AND TECHNOLOGY

SSIPMT RAIPUR

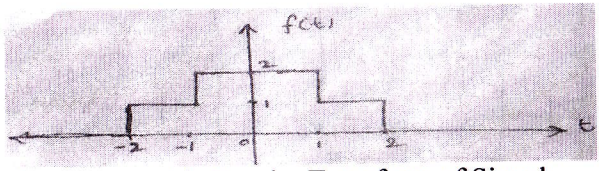
CLASS TEST – I (Feb-2019-20)
ET – 4th SEMESTER
Signals and Systems

Duration: 2 Hours **Max. Marks: 40**

Note: Attempt any *five* and each question carry *equal* marks.

1. State whether the following signals are periodic or not, give reasons. If they are periodic find their fundamental period.
   a. $x(t) = 2\,Cos\,100\pi t + 5\,Sin\,50\pi t$
   b. $x(t) = Cos\,4\pi n\,.\,Sin\,500\pi n$
2. For the signal : $x(t) = 1;\ -1 \le t \le 1$
   $x(t) = 0;\ otherwise$
   Sketch the following
   a. $x(t)$
   b. $x(-2+t)$
   c. $x(-2t+3)$
   d. $x\left(\frac{t}{2}+5\right).u(t)$
3. For the following discrete time systems check whether the systems are
   a. Static or Dynamic
   b. Linear or Non-linear
   c. Shift invariant or shift variant
   d. Causal or non-causal

   $y[n] = \sum_{k=-a}^{n+1} x[k]$; $y[n] = x[-n+2]$; $y[n] = x[n]\cos wn$;
4. State all the properties of Fourier Transform.
5. Determine the Fourier Transform of the signal shown:



6. Obtain trigonometric Fourier Transform of Signal:
   i. $x(t)= e^{-at}u(t)$
   ii. $x(t)= e^{-a|t|}$

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SHRI SHANKARACHARYA INSTITUTE OF PROFESSIONAL MANAGEMENT AND TECHNOLOGY

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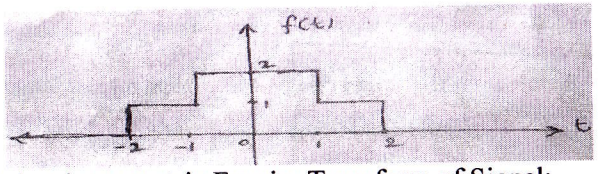

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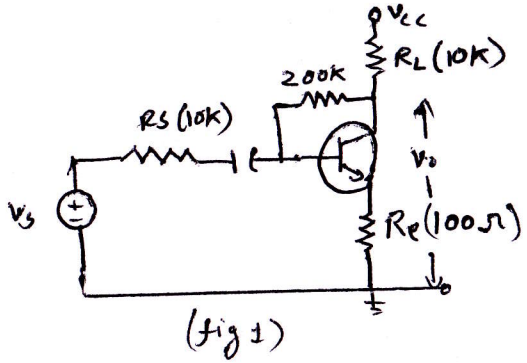
SHRI SHANKARACHARYA INSTITUTE OF
PROFESSIONAL MANAGEMENT AND TECHNOLOGY
CLASS TEST – I (February 2020)
IT, ET – 4th SEMESTER
Analog Electronics

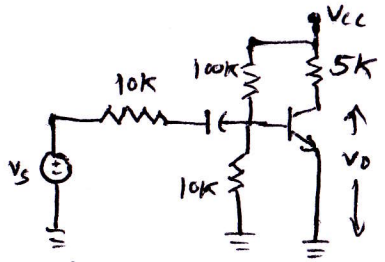
Duration: 2 Hours **Max. Marks: 40**

Note: ***Attempt any five questiosn.***

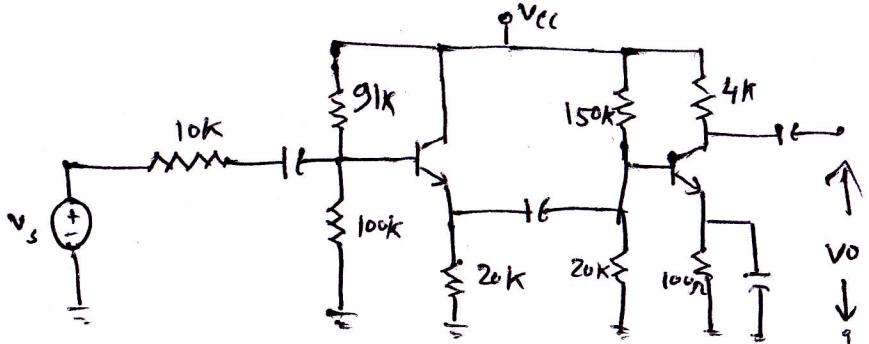
1. What is an amplifier, how transistor acts as an amplifier?
2. State and prove Miller's Theorem.
3. Write a short note on small signal hybrid model of BJT.
4. Calculate all the parameters for the amplifier at low frequency (fig 1)
5. Calculate all the parameters for the amplifier at low frequency (fig 2)
6. Calculate all the parameters for the amplifier at low frequency (fig 3)



(fig 1)



(fig 2)



fig(3)

SHRI SHANKARACHARYA INSTITUTE OF
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IT, ET – 4th SEMESTER
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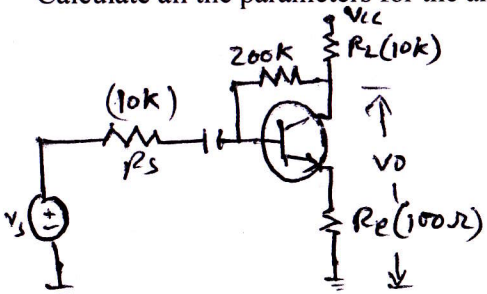

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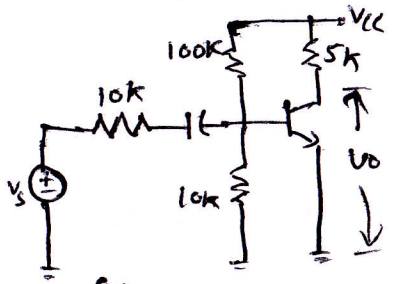

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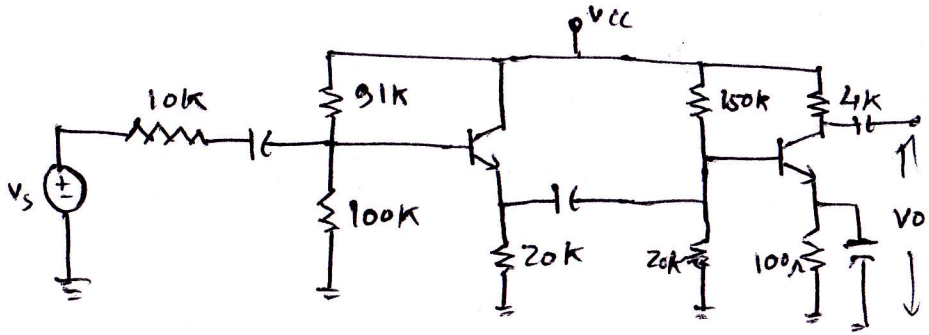

(fig 3)

SSIPMT RAIPUR

SHRI SHANKARACHARYA INSTITUTE OF PROFESSIONAL MANAGEMENT AND TECHNOLOGY
CLASS TEST – I (FEBRUARY-2020)
Branch ET&T – SEMESTER-IV
SUBJECT- Microprocessor and Interfaces

Duration: 2 Hours **Max. Marks: 40**

NOTE: Question no. one (1x5) is compulsory. Attempt any 5(5x7) Question from remaining Qu.

Q. 1) a) How processor will distinguish between data and opcode?
b) What is the similarity and dissimilarity between Subtraction and comparison Instruction? **Mark (1x5)**

Q. 2) Explain the functioning of the following pine of 8085 Microprocessor. Indicate their activation status: **Mark (5x7)**
ALE, Ready, TRAP, IO/M X1 X2, HOLD, HLDA.

Q.3) Draw Timing Diagram for OUT 80H(Port Address)?

Q.4) Discuss the different addressing mode of 8085 microprocessor with Suitable examples.

Q.5) How the processor will manipulate the content of flag register explain with appropriate example?

Q.6) Write Assembly language program for adding 32bit of data?

Q. 7) Write the function of instructions –
I) LHLD, 16bit address, II) DAD, rp III) CALL, XXYY
IV) MOV M,A

SSIPMT RAIPUR

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