SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

B.E. Sem-5 (EC) MID SEMESTER EXAMINATION
SUBJECT: (151004)
Electronic Communication

DATE: 14/10/2014   TIME: 02:00 AM to 03:15 PM   MAX. MARK: 30

Instructions: 1. Attempt all question.
                2. Make suitable assumptions wherever necessary
                3. Figure to the right indicate full marks
            .

Q 1 (A)   Draw and explain double conversion receiver   7

   (B)   1.what is signal to noise power?   3
         2.What we conclude from Friiss formula?
         3.Write statement of Shannon's capacity Theorem.

Q2 (A)   Write all types of Fundamental noises and explain any two.   5
    (B)   what do you understand by image frequency and its rejection ?   5
          For a receiver with IF and RF frequency of 455kHz and 950 kHz
          respectively determine:
               a.local oscillator frequency
               b.Image frequency
               c.Image frequency rejection ratio,
                 take Q=70.
                                          OR
Q2 (A)   A series tuned circuit has Q of 130 and a tuning capacitance of 250 pF   5
          and is resonant at 450kHz.Detrmine:
               a.The impedance at resonance and
               b.The relative response of circuit at a frequency of 400 kHz.
    (B)   Write types of modulation system and explain any one.   5

Q3 (A)   The equivalent noise resistance of an amplifier is 300 ohm and shot noise   5
          current is 5 microA.The amplifier is fed from 150 ohm and 10 microV
          sinusoidal signal source.Calculate the individual noise voltage at the input
          and the input signal to noise ratio in decibels.The noise bandwidth is
          10MHz.
    (B)   Explain tracking and adjacent channel selectivity.   5
                                          OR
Q3 (A)   1. Compare Wideband and Narrowband FM   3
          2. Explain Capacitive tap and derive its equation?   4
Q3 (B)   explain need of modulation?   3

SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

B.E. Sem-V (EC) MID SEMESTER EXAMINATION (Winter'14 Session)

SUBJECT: (151002) Engineering Electromagnetics

DATE: 11-10-2014   TIME: 2:00 PM to 3:15 PM   Total Marks: 30

Instructions: 1. All the questions are compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if required.

Q 1   (A)   Derive an Expression for electric field intensity due to line charge.   [7]

(B)   Convert $A = (3a_x + 4a_y + 5a_z)$ at the point (3, 4, 5) in spherical co-ordinates.   [3]

Q 2   (A)   A vector field is given by $A(r, , z) = 30e^{-r}a_r - 2za_z$, verify divergence   [7]
theorem for volume enclosed by $r = 2$, $z = 0$ and $z = 5$.

(B)   Define the following.   [3]
   I.   Stoke's theorem
   II.   Coloumb's law
   III.   BiotSavart's law

OR

Q 2   (A)   Find E at the origin if the following charge distributions are present in free   [5]
space , (i) Point charge 12 nC at P(2 ,0 ,6) ,
           (ii) Uniform line charge density 3 nC/m at x = -2 , y = 3 ,
           (iii) Uniform surface charge density 0.2 nC/m^2 at x =2.

Q 2   (B)   Derive an expression for boundary conditions of dielectric - dielectric   [5]
Interface.

O 3   (A)   Find the potential function and the electric field intensity for the origin   [6]
between two concentric right circular cylinders, where v = 0 at r = 1 mm and v
= 150 volts at r = 20 mm. Neglect fringing effect.

(B)   Give physical interpretation of curl.   [4]

OR

Q 3   (A)   Obtain point form of Ampere's circuital law.   [7]

(B)   Find out the divergence and curl of the following function, $A = 2xya_x + x^2za_y$ [3]
$+ za_z$.

SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

B.E. Semester- (V) - MID SEMESTER EXAMINATION (Winter'14 Session)

SUBJECT: Integrated Circuits and Application (151003)

Date: 15-10-2014   **TIME: 2:00 P.M. to 3:15 P.M**   **Total Marks: 30**

Instructions: 1. Attempt all questions.
             2. Make suitable assumptions wherever necessary.
             3. Figures to the right indicate full marks.

Q.1	(a)	**1**. Input bias current. **2**. Input offset current. **3**. Input offset voltage. **4**. Differential input resistance. **5**. Common Mode Rejection ratio	**05**
	(b)	Draw block diagram of Op-Amp and its equivalent circuit	**05**

Q.2	(a)	What is error voltage? How can it be reduced?	**03**
	(b)	Consider an inverting operational amplifier with R_F=100KΩ and R_1 =1KΩ. Input offset voltage drift is 30µV/°C and input offset current drift is 300Pa/°C. Assume the amplifier is nulled at 25°C. Calculate the value of error voltage E_V and output voltage at 35°C if V_{in} =1mV dc.	**07**

<div align="center">OR</div>

Q.2	(a)	For an inverting amplifier with a gain equal to 100 and feedback resistance of 47 kΩ, determine maximum possible output offset voltage due to (1) input offset voltage of 6 mV, and (2) Input bias current of 500 nA. What value of R_{OM} is needed to reduce offset voltage effect due to the effect of input bias current?	**07**
	(b)	Explain with necessary diagrams the working of Absolute value output circuit.	**03**

Q.3	(a)	Draw and explain Triangular and Sawtooth wave generator circuit using op-amp.	**05**
	(b)	Design a wide band-reject filter having high cut off frequency of 200 Hz and low cut off frequency of 1 KHz.	**05**

<div align="center">OR</div>

Q.3	(a)	What information is contained in a typical op-amp datasheet? Briefly explain. List three basic temperature grades for IC. What is the temperature range of 741C and 741A op-amp?	**05**
	(b)	Explain the operation of 555 IC based astable multivibrator with necessary circuit diagram and waveforms.	**05**

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B.E. Semester- V - MID SEMESTER EXAMINATION (Winter'14 Session)

SUBJECT: Management II (150001)

Date: 09/10/2014   TIME: 2:00 pm to 3:15 pm   Total Marks: 30

Instructions: 1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1	(a)	Define Marketing and discuss the role of 4Ps in formulating marketing strategies.	05
	(b)	Discuss the importance of Human Resource Management	05
Q.2	(a)	Explain the factors affecting the plant location planning	05
	(b)	What is Selection? Explain the selection process.	05

OR

Q.2	(a)	Distinguish between Process Layout and Product Layout.	05
	(b)	XYZ Co. Ltd, producing a pen, which selling price is Rs 18 per unit has a fixed cost of Rs 75,000 and variable cost is Rs. 8 per unit. Calculate Break Even Point (BEP).	05
Q.3	(a)	Discuss any two demand forecasting methods.	05
	(b)	What are the sources of recruitment? Mention their advantages and disadvantages.	05

OR

Q.3	(a)	Explain various marketing concepts in detail.	05
	(b)	Write a short note on types of tests.	05

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SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

B.E. Semester- (V) - MID SEMESTEREXAMINATION (winter'14 Session)

SUBJECT: MICROCONTROLLER & INTERFACING (151001)

DATE: 10/10/2014   TIME: 02:00pm to 03:15pm   Total Marks: 30

Instructions: **1. Attempt all questions.**
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (A)	Explain SCON & TMOD register.	05
(B)	Write an ALP to check if the character string of length 7, stored in RAM locations 50H onwards is a palindrome. If it is, output 'Y' to port 2.	05
Q.2 (A)	Write an assembly language program to transmit "GUJARAT" with 9600 baud rate.	05
Q.2 (B)	Explain addressing modes of 8051.	05

OR

Q.2 (A)	Write an ALP to display "SOCET" on LCD. Draw interfacing diagram also	07
Q.2 (B)	Explain data types of 8051C.	03
Q.3 (A)	Write an ALP to generate the delay of 1 sec using timer 0, mode1. Use XTAL= 22 MHz.	05
Q.3 (B)	Explain the following instructions: i)XCHD ii)SWAP iii)CJNE iv)DJNZ	05

OR

Q.3 (A)	Explain programming steps for serial reception.	03
Q.3 (B)	Write an ALP to generate sine wave on port 1 using DAC. Draw interfacing diagram.	07

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B.E. Semester- (V) - MID SEMESTER EXAMINATION (winter'14 Session)

SUBJECT: Visual Basic Application And Programming (150706)

Date:7-11-2014   **TIME: 02:00 P.M. to 03:15 P.M**   **Total Marks: 30**

Instructions: 1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1	(a)	Difference between VB and VBA	3
	(b)	Explain If…End if conditions with examples	3
	(c)	Explain Private Public and Static Scope of Variable.	4
Q.2	(a)	Explain MsgBox and InputBox in details with Examples?	5
	(b)	Explain Different types of errors with example.	5

OR

Q.2	(a)	Explain Do loop with example. Give difference between pretest and post test loop.	5
	(b)	What is role of array in programming? Explain static and dynamic array of VB with help of example.	5
Q.3	(a)	Explain call by value and call by ref with example.	5
	(b)	Explain following properties of Listbox control: 1) List count 2) Multiselect 3) ListIndex	5

OR

Q.3	(a)	List various mouse events. Explain drag over and drag drop event in detail.	5
	(b)	Write a program in VB to display ARMSTRONG NO.	5

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