Code No. 5085 / S

FACULTY OF ENGINEERING

B.E. 2/4 (Civil) II – Semester (Suppl.) Examination, January 2016

Subject: Surveying – II

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part A. Answer any five questions from Part B.

PART – A (25 Marks)

1 What are the desired relations between fundamental lines of theodolite? 2
2 What is spire test? How is it conducted? 2
3 How do you account for axis signal correction in indirect leveling? 3
4 Explain the importance of independent coordinate system. 2
5 Calculate the ordinates at 10 m distance for a circular curve having a long chord of 80 m and a versed sine of 4 m 3
6 A reverse curve is to be seen from a point T_1 on AA' to the point T_2 on CC'. If T_1T_2=720m, $\angle AT_1T_2 = 47^o30'$ and $\angle T_1T_2 = 25^o12'$, find the common radius of the curve. 3
7 What are the advantages of transition curves? 2
8 What are the methods of setting out of vertical curves? 3
9 What is sounding? List out various methods of locating soundings? 3
10 What is the principle and use of subtense bar? 2

PART – B (5x10 = 50 Marks)

11 a) Describe the parts of a transit vernier theodolite with a neat sketch. 5
b) State what errors are eliminated by Repetition method. How will you set out a horizontal angle by method of Repetition? 5

12 a) A four sided traverse ABCD, has the following lengths and bearings. 7

Side	Length (m)	Bearing
AB	500	Roughly east
BC	245	168^o
CD	Not obtained	270^o
DA	216	10^o

Find the exact bearing of the side AB.
b) Briefly outline all the methods of balancing a traverse. 3

13 Two straights AB and BC meet at an inaccessible point B. They are to be connected by a simple circular curve of 500 m radius. Two points P and Q are selected on AB and BC respectively and the following data are obtained: $\angle APQ = 157^o22'$; $\angle CPQ = 164^o38'$. PQ = 200 m. Calculate the necessary data for setting the curve by deflection angles, if the chainage of P is (57+17.30) chains and the peg interval is 30 m. 10

14 Design a vertical curve 240 m long connecting a rising gradient of 1 in 50 with a falling gradient of 1 in 80 which meet in a summit of R.C. of 140.45 m and chainage of 2345 m. Take a peg internal of 20 m. 10

15 a) What do you mean by hydrographic surveying? What are the various operations conducted in hydrographic surveying? 5
b) What is tangential method of Tacheometry? What are its advantages and disadvantages over the stadia method? 5

…2

16 a) What are different methods of setting out simple circular curve? Briefly explain them. 5
b) Describe the features of total station equipment. 5

17 Write short notes on the following: 10
a) Gale's traverse table
b) Refraction and curvature corrections
c) Principle of microoptic theodolite
d) Computations in compound curves

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Code No. 5093 / S

FACULTY OF ENGINEERING

B.E. 2/4 (EE/Inst.) II - Semester (Suppl.) Examination, January 2016

Subject : Electromagnetic Theory

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions from Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

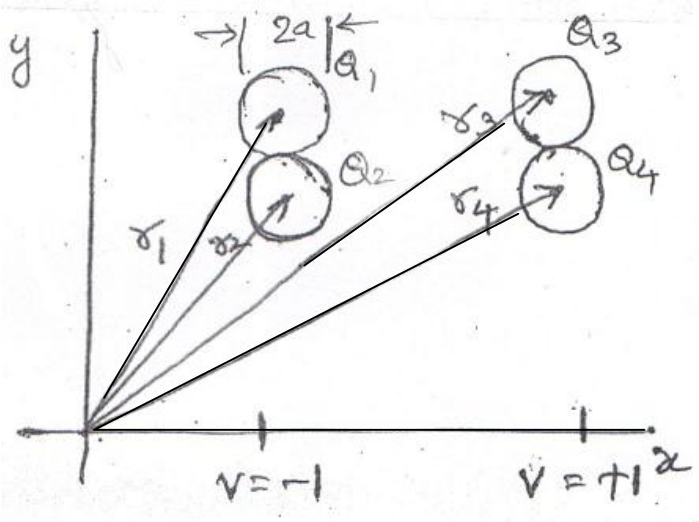
1 What is a vector field? (2)
2 Define cross product with an example. (2)
3 Give the classification of magnetic materials. (3)
4 Draw Hysterisis loop. (2)
5 Mention various techniques available to solve electromagnetic boundary value problems. (3)
6 Compare finite element method and finite difference method. (3)
7 What is displacement current? (3)
8 What is wave number? (2)
9 Explain Electromagnetic compatibility. (2)
10 Define wave velocity and wave length. (3)

PART – B (50 Marks)

11 (a) Explain briefly about cylindrical and spherical coordinate systems. (5)
(b) Vector A = $3u_x + 4u_y – 5u_z$ and B = $-6u_x + 2u_y+4u_z$ extend out from origin. Find angle between A and B, unit vector normal to the plane containing A and B. (5)

12 (a) State Biot-Savarts law and derive field intensity in vector form. (5)
(b) Find the magnetic on one current carrying element due to another current carrying element. (5)

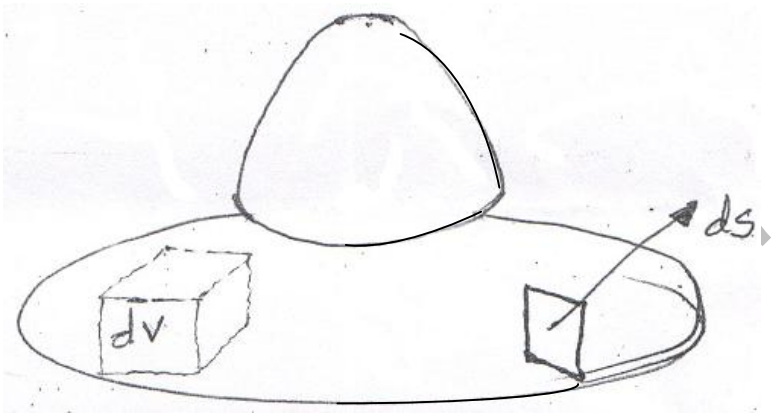
13 (a) Explain Laplace's equation in Cartesian and cylindrical coordinates respectively. (5)
(b) Find the values of charges that will cause the potentials as shown below, the coordinates of the points in the plane Z = 0 are Q_1 = (2, 3), Q_2 = (2, 2), Q_3 =(5, 3) and Q_4 = (5, 2). Assume that the diameter of the charges is 2a = 1m. (5)



Figure

14 (a) Obtain the force on a moving particle due to combined electric and magnetic fields. (5)

(b) State Poynting Theorem and obtain it for an arbitrarily shaped volume containing a source of electromagnetic energy. (5)



Figure

15 (a) Explain plane wave propagation in a Dielectric medium and obtain index of refraction. (5)

(b) Define depth of penetration, and explain skin effect. (5)

16 (a) Explain advantages of optical fiber over copper cables. (5)

(b) Explain sources of EMI and how to avoid EMI. (5)

17 (a) Explain magnetization and permeability. (5)

(b) Define propagation constant (γ) attenuation constant (α) and phase constant (β). (5)

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Code No. 5100 / S

FACULTY OF ENGINEERING

B.E. 2/4 (ECE) II – Semester (Suppl.) Examination, January 2016

Subject : Network and Transmission Lines

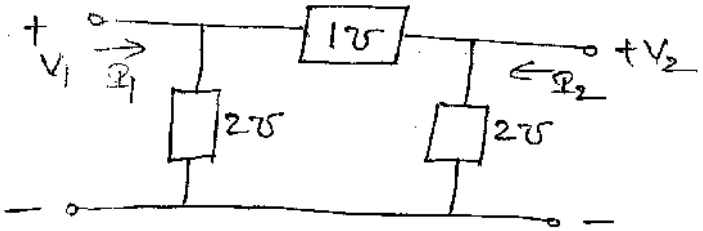
Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

PART – A (25 Marks)

1 What is the condition for symmetry and reciprocity in terms of ABCD parameters? What is the advantage of using ABCD parameters? 3

2 Compute the short circuit admittance parameters for the network given below. 3



3 What is the length of line to match 50Ω to 200Ω impedance at frequency of 1200 KHz? What should be the characteristic impedance. 3

4 What is reflection co-efficient and VSWR for 2
a) Open circuit b) Short circuit lines

5 How the value of m is decided in m derived fitter? Explain. 2

6 List the properties of positive real function. 2

7 How can you simulate infinite transmission line? 2

8 List out the characteristics of passive four terminal network. 2

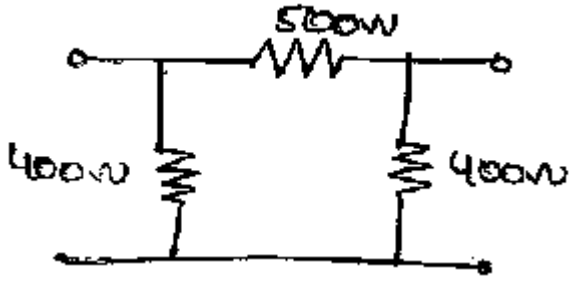
9 On a transmission line terminated in a load VSWR is measured as '2'. What % of power will be reflected back? 3

10 List the applications of smith chart. 3

PART – B (50 Marks)

11 a) Explain about image impedances and image transfer constant for a two port network. 5

b) Find the attenuation and characteristic impedance of a network shown below. 5



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12 a) Differentiate between various methods of network synthesis. 4

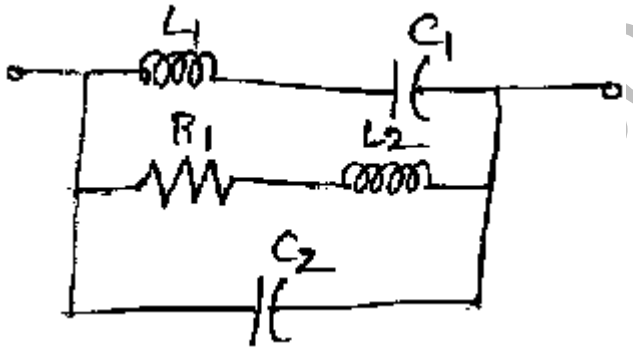
b) Synthesize the given real impedance function in canon forms : 6

$$Z(s) = \frac{(s+1)(s+2)}{(s+3)}$$

13 Classify the equalizers. Give applications and design steps of a equalizer. 10

14 a) Design a constant K high-pass T section filter for $R_0 = 600\Omega$, $f_c = 1$ KHz. 5

b) Find inverse network for the circuit shown below. 5



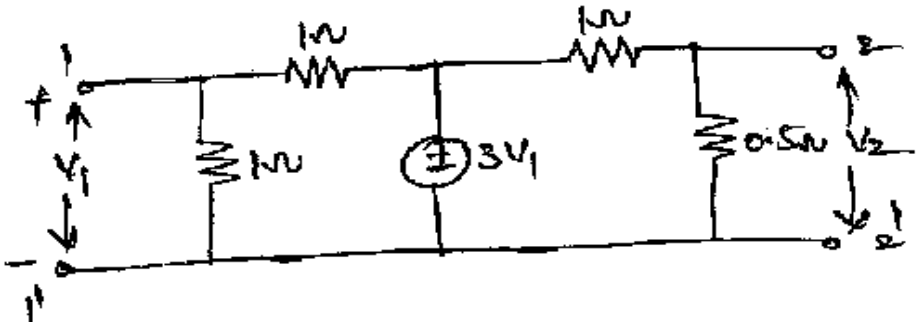
15 A loss less line with $Z_0 = 75\Omega$ terminated an impedance $Z_R = 115 - j\ 80\ \Omega$. The wavelength of the transmission is 2.5 meters. Using the Smithchart find: 10

a) Standing wave ratio

b) Max and Min line impedance

c) Distance between the load and first voltage maximum.

16 Find the Z-parameters of the resistive network shown in fig. 10



17 Write a short notes on : 10

a) Campbell's formula

b) Single and double stab matching

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Code No. 5106 / S

FACULTY OF ENGINEERING

B.E. 2/4 (M/P) II – Semester (Suppl.) Examination, January 2016

Subject : Basic Electronics

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

PART – A (25 Marks)

1 Explain Hall effect. 2
2 What is the purpose of doping a pure semiconductor? 3
3 Draw the symbols of NPN and PNP transistors. 2
4 Mention the avantages of JFET over BJT. 3
5 A negative feedback amplifier has on open loop gain of 10^4 and a closed loop gain of 300. If the open loop upper cutoff frequency is 10 KHz. Find the closed loop upper cutoff frequency. Also calculate the total harmonic distortion with feedback if there is 20% harmonic distortion without feedback. 3
6 Mention the applications of negative feedback. 2
7 What are the ideal characteristics of a Op-Amp. 2
8 Show that $(X \oplus Y) \oplus (xy) = X+Y$. 3
9 Draw the V-I characteristics of UJT. 3
10 Mention applications CIO. 2

PART – B (50 Marks)

11 a) The diode current is 0.6 mA when the applied voltage is 400 mV, and 20 mA the applied voltage is 500 mV. Determine $\eta \left(Assume \frac{KT}{q} = 25mV \right)$. 4

b) Explain full wave centre tapped rectifier with circuit. 6

12 a) Draw and explain n-channel JFET V-I characteristics. 5

b) For the circuit shown in fig.1, find the maximum and minimum values of zener diode current. 5

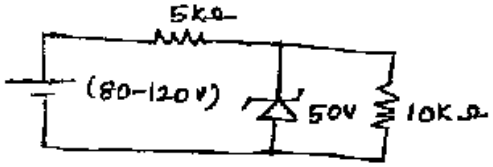

Fig (1)

13 a) Explain the types of Negative feedback amplifier. 5

b) Explain working principle of crystal oscillator. 5

14 a) Explain the applications of Op-Amp with expressions
i) Differentiator ii) Integrator

b) Draw the full adder circuit with truth table.

15 a) Draw and explain linear variable differential transformer.

b) Explain briefly Cathode Ray Oscilloscope (CRO).

16 a) Differentiate avalanche and Zener breakdown in PN junction.

b) Explain how common emitter configuration works as amplifier.

17 Write short notes on :
a) Silicon controlled rectifier
b) Transistorized IC regulation
c) Characteristics of PN-diode

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Code No. 5112 / S

FACULTY OF ENGINEERING

B.E. 2/4 (CSE) II – Semester (Suppl.) Examination, January 2016

Subject : Microprocessors and Interfacing

Time : 3 hours **Max. Marks : 75**

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

PART – A (25 Marks)

1	Define microprocessor and microcontroller.	2
2	Compare memory mapped I/O and peripheral mapped I/O.	2
3	Register B has 934H and accumulator holds 17H. Illustrate the following. i) ANA B ii) CMP B	3
4	Define cross compiler, cross assembler and tool chain.	3
5	Write short notes on RS232C.	3
6	Define BSR mode in 8255A.	2
7	Write three advantages of LCD over LEDs.	3
8	Explain the Rotate instructions of 8051 microcontroller.	2
9	List the addressing modes of 8051 microcontroller with suitable examples.	3
10	What are the applications of stepper motor?	2

PART – B (50 Marks)

11	Explain 8085 microprocessor architecture with a functional block diagram.	10
12	Explain and show diagrammatically, the sequence of progress execution and events in the execution of CALL and RET instructions of a subroutine, with a suitable example.	10
13	Explain about programmable keyboard / display controller.	10
14	Explain 8086 microprocessor with block diagram and explain about the various bits of 8086 flag register.	10
15	a) Write an 8085 assembly language program to print Fibonacci series. b) Write an 8051 assembly language in ascending order.	4 6
16	Explain about 8254 programmable interval timer and its various modes.	10
17	Write short notes on the following : a) Digital to analog converter of 8085. b) Features of Pentium and multicore processors	4 6

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Code No. 5116 / S

FACULTY OF INFORMATICS

B.E. 3/4 (I.T.) II - Semester (Suppl.) Examination, January 2016

Subject : Web Technologies

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions of Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

1 What is the difference between reset and submit buttons? (2)
2 What are the advantages of XML schemas over DTDs? (3)
3 List the characteristics of array objects in JavaScript. (3)
4 What are the five parts of JSTL? (3)
5 Differentiate Web browsers and Web servers. (2)
6 Describe the parameters and actions of chomp function with an example. (2)
7 Explain the purpose of the following functions in PHP
(a) unset (1)
(b) implode (1)
(c) explode (1)
8 What is the advantage of document-level style sheets over inline style sheets? (2)
9 Describe three major differences between Java and Javascript. (3)
10 What are the two modes of PHP processor? (2)

PART-B (5 x 10=50 Marks)

11 a) Design an XHTML form to include the following elements. (6)
i)Text box ii) 3 checkboxes iii)2 radio buttons iv)reset and submit buttons
b) Explain the purpose of and tags with an example. (4)

12 a) Design an XML document to store book information in a library. The book details should include 6 book title, author, price, number of pages. The books should be arranged according to the category.
(eg. Computers, electronics) (6)
b) Publish the above XML document using CSS. (4)

13 a) Explain the servlet life cycle. (6)
b) Write a JSP program to find the factorial of a number. (4)

14 a) Explain pattern matching in Perl with an example program. (5)
b) Write a CGI program to use a cookie to remember the last login from a user and display it when run. (5)
15 Explain the different architectures for database access. (10)

16 a) Explain the various functions for dealing with arrays in PHP. (5)
b)Write a PHP script to illustrate loops and arithmetic. (5)

17 Write short notes on the following
a) Selector forms in CSS (4)
b) Servlets versus CGI (3)
c) Document Object Model (DOM) (3)

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