

ASSIGNMENT-1

BRANCH: EC

SEM: 4TH

LAST DATE OF SUBMISSION: 20/02/2015

IES COLLEGE OF TECHNOLOGY, BHOPAL

B.E. (4th SEM) ASSIGNMENT-1

ENGINEERING MATHEMATICS (BE -401)

DATE OF ASSIGN: 02/02/2015

DATE OF SUBMISSION: 19/02/2015

Q.1	a) Define Limit. (b) What is Analytic function? (c) If $f(z)$ be regular function of z , prove that $\left\{\frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}\right\} f(z) ^2 = 4 f(z) ^2$ or (c) show that $\int_0^{2\pi} \frac{d\theta}{a+b \cos\theta} = \int_0^{2\pi} \frac{d\theta}{a+b \sin\theta} = \frac{2\pi}{\sqrt{(a^2-b^2)}}$ where $a > b > 0$	
Q.2	a) Define Harmonic function. b) Determine whether $\frac{1}{z}$ is analytic or not. (c). Find poles and order poles and residues	
Q.3	Define contour integrations.	
Q.4	Prove that Cauchy Riemann equation and define residues formula.	

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B.E. (4th SEM) ASSIGNMENT-1

EMT (EC -402)

DATE OF ASSIGN: 02/02/2015

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	a. State and explain divergence theorem and gives its physical significance. b. State and drive Stokes theorem c. Prove that: $E = -\nabla\phi$ d. Prove that: $\nabla \times \nabla\phi = 0$ e. Derive an equation for electric field from an infinite line charge f. Derive an equation for electric field intensity due to circular disc whose radius is 'R' unit and total charge is Q g. Show that at a boundary between two dielectrics the tangential component E and normal component of D must be continuous. h. The region $y < 0$ contain a dielectric material for which $\epsilon_{r1} = 2.5$ while the region $y > 0$ is characterized by $\epsilon_{r2} = 4$. Let $E_1 = -30a_x + 50a_y + 70a_z$ V/m. Find (I) E_{N1} (II) E_{t1} (III) θ_1 (iv) E_2 .	
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B.E. (4th SEM) DIGITAL ELETRONICS

Assignment-1 (EC-403)

DATE OF ASSIGN: 02/02/2015

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Ques-1	What all the number system essential for digital application?	50 words
Ques-2	Define K- map	50 words
Ques-3	Proof the De- Morgan's theorem.	100 words
Ques-4	Simplify the Boolean function by using K- Map method $f(A,B,C,D)=\sum m(0,1,3,7,8,10)$	Numerical
Ques-5	Simplify the Boolean function by using K- Map method $f(A,B,C,D)=\sum m(0,5,7,13,14,15)$	Numerical
Ques-6	Explain Boolean operations	100 words
Ques-7	Write the types of Gate	100 words
Ques-8	Simplify the Boolean function by using K- Map method $f(A,B,C,D)=\sum m(0,2,4,7,8,12)+d(5,11,9)$	Numerical
Ques-9	Write the difference between K-map and Quine Mc Cluskey method	50 words
Ques-10	Convert the followings: a) $(111001.11)_2 = (?)_{10}$ b) $(A6C)_{16} = (?)_2$	Numerical

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B.E. (4th SEM) ELETRONICS CIRCUIT

Assignment-1 (EC-403)

DATE OF ASSIGN: 02/02/2015

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IES GROUP OF TECHNOLOGY

ASSIGNMENT - I

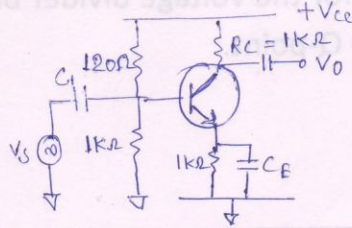
SUBJECT NAME: ELECTRONIC CIRCUITS

DATE OF AWARD: / / 15

SUBJECT CODE: EC-404

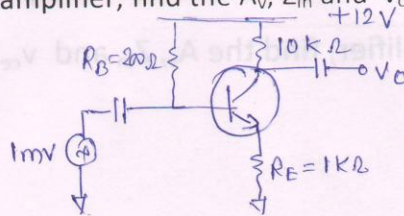
DATE OF SUBMISSION: / / 15

1. a) Write short notes on AC and DC load lines.
 b) Write short notes on biasing of transistors.
 c) Find the Q- point values for the voltage divider bias circuit. And also draw a load line and locate Q-point.

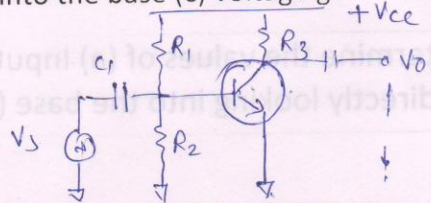


2. a) What are the advantages of negative feedback? Explain.
 b) State and briefly explain Barkhausen criteria of oscillation.
 c) Explain why CE amplifier requires a form of DC stabilization, whereas CB amplifiers are usually not stabilized.
3. Draw a circuit diagram; explain the working of a transistor amplifier in which phase inversion of input signal does not take place..

4. For a single transistor amplifier, find the A_v , Z_{in} and v_{ce} . take $\beta=100$, $r_e' = 20\text{mv}/I_e$



5. In a CE amplifier, determine the values of (a) Input resistance of the stage. (b) Input resistance directly looking into the base (c) voltage gain in dB



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B.E. (4th SEM) Assignment -1

Analog Communication (EC-405)

DATE OF ASSIGN: 02/02/2015

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Q.1	What do you mean by Signals and Type of Signals.	2
Q.2	What is the need of Frequency domain analysis and Time domain analysis?	3
Q.3	State and Prove the properties of Fourier transform.	3
Q.4	Explain Linear Time Invariant and type of system.	7
Q.5	What do you mean by Convolution? Derive the properties of Convolution.	7