AR13

CODE: 13HS2004 SET-2

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
II B.Tech II Semester Regular / Supplementary Examinations, May-2016
MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS
(Common to Civil and Mechanical Engineering)

Time: 3 Hours **Max Marks: 70**

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. Explain the following briefly
   a) Macroeconomics
   b) Law of Demand
   c) Iso-quants
   d) Limitations of BEP
   e) Monopolistic Competition
   f) Peak Load Pricing
   g) Need for Capital Budgeting
   h) Net Present Value Method
   i) Trial Balance
   j) Liquidity Ratios

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Define Managerial Economics,. Explain its role in managerial decision-making process **6 M**
   b) Briefly discuss the demand determinants **6 M**

(OR)

3. a) Explain the Price Elasticity of demand and discuss the practical applicability of the concept **6 M**
   b) Discuss the factors determining the Elasticity of demand **6 M**

UNIT-II

4. a) Explain the meaning and importance of production function **6 M**
   b) Explain the operation of Law of Diminishing returns and its business implications **6 M**

(OR)

5. a) Distinguish between: **6 M**
   i) Fixed costs Vs Variable costs ii) Explicit costs Vs Implicit costs
   b) From the following information relating to the HI-TECH Publishers you are required to find out **6 M**
   (i) Contribution (ii) Break-even point in units iii) Margin of safety and (iv) Profit . Total fixed costs-Rs.4,500, Total Variable Costs-Rs.7,500 Total sales revenue-Rs.25,000, Units Sold-5,000 (units) Also calculate the volume of sales to earn a profit of Rs.6,

UNIT-III

6. A lathe purchased for Rs.10,000 and the assumed life is 10 years and scrap value is Rs.2,000. If the depreciation is charged by Diminishing Balance method, calculate the percentage by which value of the lathe is reducing every year and depreciation fund after 3 years **12 M**

(OR)

7. a) Briefly discuss features of perfect competition **6 M**
   b) Define monopolistic competition. Also explain the price-output determination in monopolistic competition **6 M**

UNIT-IV

8. a) Define capital budgeting and also state its need **4 M**
   b) Rank the following investment projects in order of the profitability according to: **8 M**
   i) Pay back method and (ii) Net present value assuming the cost of capital is 10%

Project	Initial outlay (Rs.)	Annual cash inflow (Rs.)	Life (in years)
X	20,000	4,000	8
Y	10,000	4,000	5

(OR)

9. a) What are the different methods of capital budgeting. Explain with examples. **6 M**
   b) List the steps involved in the preparation of charges in working capital statement and fund flow statement **6 M**

UNIT-V

10. a) What is meant by Journal? What are the sub-divisions of journal? Also state its advantages **6 M**
    b) Explain the details of financial accounting cycle. **6 M**

(OR)

11. From the following particulars, prepare a Trading and Profit and Loss Account and a Balance Sheet of Sri. Krishna. Ledger balances as on 31.3.2012 **12 M**

Particulars.

Particulars	Rs.
Sales	83,000
Opening Stock	8,200
Land and Buildings	23,700
Debtors	9,300
Creditors	6,100
Bills Receivable	1,200
Wages	12,600
Purchases	43,600
Carriage	900
Discount received	200
Sales Returns	600
Furniture	7,400
Travelling Expenses	5,300
Salaries	16,900
Purchase returns	100
Insurance	600
Capital	29,600
Plant	20,000
Bank overdraft	5,000
Cash	3,700

Adjustments: i) Closing stock was valued at Rs.7,000
ii) Provide for depreciation at 10% on plant
iii) Insurance was prepaid for a quarter
iv) An amount of Rs.3,000 was due to workers

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CODE: 13BS2007 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

II B.Tech II Semester Regular / Supplementary Examinations, May-2016

COMPLEX VARIABLES AND STATISTICAL METHODS

(Electrical and Electronics Engineering)

Time: 3 Hours **Max Marks: 70**

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) Find regular function whose imaginary part is e^xsiny
   b) Write about Cauchy's formula
   c) Define residues at singular point in residue theorem
   d) State Laurent's theorem
   e) In standard what is the magnification and rotation
   f) Write a properties of bilinear transformation
   g) What is probability
   h) What is probability generating function
   i) Define null hypothesis
   j) What are the properties of x^2 distribution (Chi-Square)

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a. If f(z) is an analytic function with constant modulus, Show that f(z) is constant **6 M**
   b. If w= log(z) , find dw/dz and determine where w is non analytic **6 M**

(OR)

3. Evaluate using Cauchy's integral formula **12M**

   i) $\int_C \frac{e^{2z}\ dz}{(z-1)(z-2)}$ Where c is the circle $|Z| = 3$

   ii) $\int_C \frac{Cos\pi z}{z^2-1} dz$ around a rectangle with vertices $2\pm i, -2\pm i$

UNIT-II

4. a. Expand f(z)=cosz in Taylor's series about $z=\frac{\pi}{4}$. **6M**
   b. Find the sum of the residues of f(z) $=\frac{Sin\ z}{zCosz}$ at its poles inside the circle $|Z| = 2$ **6M**

(OR)

5. Find the nature and location of singularities of the following functions **12 M**

   i) $\frac{z-Sinz}{z^2}$ ii) $\frac{1}{sinh2z}$ iii) $\frac{1}{Cosz-Sinz}$

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UNIT-III

6. Find the bilinear Transformation which maps the points z=1,i,-1 on to the points w=0,1, ∞. **12 M**

(OR)

7. a. Discuss the transformation w=√z .Is it conformal at origin **6 M**

b. Show that under the transformation w= $\frac{z-i}{z+i}$ real axis in the z plane is mapped in to the Circle $|w| = 1$. When portion of z plane correspond to the Interior of the circle. **6M**

UNIT-IV

8. a. Given P(A) = 1/4 , P(B)= 1/3 and P(AUB) =1/2 Find the value of P(A/B), P(B/A),P(A∩B^I) and P(A/B^I) **6 M**

b. For the distribution function f(x) = $\frac{e^{-x/C}}{C}$, 0≤x≤∞, C>0, hence find mean and Standard deviation. **6 M**

(OR)

9. a. A Coin was tossed 400 times and the head turned up 216 times. Test the hypothesis that the coin is un biased at 5% level of significance **6 M**

b. The nine items of a sample have the following values: 45,47,50,52,48,47,49,53,51. Does the mean of these differ significantly from the assumed mean of 47.5 **6 M**

UNIT-V

10. a. Two samples of 9 and 7 individuals have variance 4.8 and 9.6 respectively. Is the variance 9.6 significantly greater than the variance 4.8 **6 M**

b. Explain sampling distribution and testing hypothesis **6 M**

(OR)

11. a. What are type –I and Type-II errors **6 M**

b. In a city A 20% of random samples of 900 school boys had a certain slight physical defect. In another city B, 18.5% of a random sample of 1600 schoolboys had the same defect. Is the difference between the proportions significant **6 M**

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ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

II B.Tech II Semester Regular / Supplementary Examinations, May-2016

ELECTRONIC CIRCUITS – II

(Electronics and Communication Engineering)

Time: 3 Hours **Max Marks: 70**

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) What are the limitations of single stage amplifier?
   b) List any two reasons for the need of cascading amplifier.
   c) What is gain of the negative feedback amplifier?
   d) Write any two disadvantages of negative feedback amplfier.
   e) What is piezo electric effect?
   f) What is the feedback employed in a wein bridge amplifier?
   g) What are the merits of push pull power amplifiers.
   h) What is cross over distortion?
   i) Define load regulation in voltage regulator?
   j) What is efficiency of transform coupled class B power amplifier?

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Derive the expression for gain and upper cut off frequency of RC coupled amplifier at high frequency range? 6M
   b) Explain the operation of two stage RC coupled amplifier with neat circuit diagram. 6M

(OR)

3. a) Derive the expression for gain and upper cut off frequency of direct coupled amplifier. 6M
   b) Derive the expression for gain of JFET amplifier in common source configuration. 6M

UNIT-II

4. a) Explain general characteristics of negative feedback amplifiers 9M
   b) What is the effect of negative feedback on Bandwidth. 3M

(OR)

5. a) Analyse typical voltage shunt feedback amplifier 6M
   b) Derive expression for voltage gain, i/p impedance in case of voltage seris feedback amplifier. 6M

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UNIT-III

6.	a)	Sketch the circuit of a Wien bridge oscillator. What determines the frequency of oscillation? Will oscillations take place if the bridge is balanced? Explain.	9M
	b)	In the Colpitts oscillator, $C_1 = 0.1$ μF and $C_2 = 0.02$ μF. If the frequency of the oscillator is 10kHz. Find the value of the inductor. Find the required gain for oscillation.	3M
		(OR)	
7.	a)	Derive the expression for the frequency of oscillation and the minimum gain required for sustained oscillations of phase shift oscillator using an BJT.	8M
	b)	Compare different types of oscillators in terms of frequency of oscillation and condition for maintaining oscillation.	4M

UNIT-IV

8.	a)	Derive the expressions for efficiency of class A power amplifier with transformer coupled load.	6M
	b)	Find amplifier efficiency of a Class A transformer coupled power amplifier has $V_{CC} = 20V$, $R_L=10\Omega$ and a turns of ratio 20.	6M
		(OR)	
9.	a)	Explain the merits and demerits of Direct coupled power amplifier.	5M
	b)	Draw the circuit of push-pull amplifier and explain its operation with waveforms.	7M

UNIT-V

10.	a)	What are the draw backs of single tuned amplifier over double tuned amplifies? Explain?	6M
	b)	What is stagger tuned amplifier? Explain its working.	6M
		(OR)	
11.	a)	Describe the operation of series voltage regulator.	6M
	b)	Explain in detail, how Zener diode acts as voltage regulator.	6M

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ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
II B.Tech II Semester Regular / Supplementary Examinations, May-2016

SOFTWARE ENGINEERING

(COMMON TO CSE & IT)

Time: 3 Hours **Max Marks: 70**

PART-A

Answer all questions **[1 X 10 = 10M]**

1. (a) What is ISO 9001: 2000
   (b) What is software safety?
   (c) Define software project plan.
   (d) Define software metric.
   (e) What is software project management?
   (f) Define proactive risk strategy.
   (g) List different risk strategies.
   (h) Define verification and validation.
   (i) Define software quality.
   (j) Define RMMM.

PART- B

Answer one question from each Unit **[5 X 12 = 60M]**

UNIT I

2. Explain about the following
   a). Unified Process. [6M]
   b). Waterfall model [6M]

(OR)

3. Elaborate about Evolutionary Process Models. [12M]

UNIT II

4. Explain about all types of System Models (Context, Behavioral, Data and Object Models). [12M]

(OR)

5. Discuss about the following a). Requirement Validation [6M]
   b). Requirement Management. [6M]

UNIT III

6. a) Define an Object and Class. Explain about Object Oriented Design Process. [6M]
   b) Write about the Golden Rules of User Interface Design. [6M]

(OR)

7. Describe in details about Design Engineering (Design Process, Design Concepts). [12M]

UNIT IV

8. Write about a). Basic Path Testing [6M]
   b). COCOMO Model [6M]

(OR)

9. Explain about a). System Testing [6M]
   b) Metrics for Analysis Model [6M]

UNIT V

10. Explain the following
    a). Risk Identification [6M]
    b). Risk Projection [6M]

(OR)

11. Write about the following
    a) Statistical Quality Assurance [6M]
    b) Software Quality Assurance (SQA) activities. [6M]