

| | | | | | | | | | |
|----------------------|--|--|--|--|--|--|--|--|--|
| Hall Ticket Number : | | | | | | | | | |
|----------------------|--|--|--|--|--|--|--|--|--|

Code : 1GA51

R-11 / R-13

III B.Tech. I Semester Regular & Supplementary Examinations Nov/Dec 2015

Managerial Economics and Financial Analysis

(Common to CE, ME & ECE)

Max. Marks: 70

Time: 03 Hours

Answer any five questions

All Questions carry equal marks (14 Marks each)

1. Managerial economics is the application of economic theory to business management. Discuss. 14M
2. What is elasticity of demand? Explain price elasticity of demand and its measurements. 14M
3. What is production function? Explain the concept of Cobb-Douglas production function. 14M
4. Critically examine the role of price fixation with reference to different pricing methods 14M
5. Compare and contrast public and private sector organisations? Suggest are the private sector business organizations promoted Indian economy globally 14M
6. From the following data, you are required to calculate:
Fixed Expenses ₹ 90000. Variable Cost per unit ₹ 5. Selling Price per unit ₹ 10
 - a) BE Sales in Units and Rupees 4M
 - b) P/V Ratio 4M
 - c) Sales required earning a profit of ₹ 50,000. 6M
7. From the following Trial Balance of XYZ Ltd. Co as on 31st Dec, 2014 is given below. Prepare final accounting statements.

| Particulars | Debit | Credit |
|-------------------------------|-----------------|-----------------|
| Capital | | 1,50,000 |
| Plant & Machinery | 50,000 | |
| Sundry Debtors and Creditors | 40,000 | 20,000 |
| Wages | 25,000 | |
| Purchases and Sales | 2,15,000 | 3,80,000 |
| Opening Stock | 35,000 | |
| Salaries | 20,000 | |
| Insurance | 5,000 | |
| Cash at Bank | 30,000 | |
| Cash on Hand | 35,000 | |
| Interest on Loan | 10,000 | |
| Discount | 5,000 | |
| Vehicles | 35,000 | |
| Term Loan | | 35,000 |
| Bills Receivables and Payable | 45,000 | 15,000 |
| Furniture | 50,000 | |
| | 6,00,000 | 6,00,000 |

Closing Stock was valued at ₹ 50000/-.

14M

8. Discuss the role and importance of ratio analysis to assess the performance of a firm

14M

| | | | | | | | | | |
|----------------------|--|--|--|--|--|--|--|--|--|
| Hall Ticket Number : | | | | | | | | | |
|----------------------|--|--|--|--|--|--|--|--|--|

Code : 1G351

R-11 / R-13

III B.Tech. I Semester Regular & Supplementary Examinations Nov/Dec 2015

Analog Communications
(Electronics & Communication Engineering)

Max. Marks: 70

Time: 03 Hours

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. a) Explain the envelope detection of an AM wave. 8M
b) Explain the need of modulation. 6M
2. a) Draw the circuit diagram of balanced ring modulator and explain its operation with necessary waveforms and spectrums. 8M
b) Explain COSTAS Loop in detail. 6M
3. a) Show that the VSB wave pulse carrier contains the base band information in its envelope. 8M
b) Compare the DSBSC, SSBSC with AM. 6M
4. a) Explain the detection of FM wave by using the phase locked loop. 7M
b) Explain the Foster-Seely discriminator method of FM detection. 7M
5. a) Discuss the threshold effect in angle modulation technique. 8M
b) Distinguish between pre-emphasis and de-emphasis in detail. 6M
6. a) Explain each block of the AM transmitter block diagram with high level modulation. 9M
b) An AM transmitter radiates 2 KW when the modulation is 75%. How much carrier power is required if we want to transmit the same message by an AMDSBSC transmitter? 5M
7. a) Discuss about the choice of IF in Super heterodyne receiver. 8M
b) What are the merits of Super heterodyne receiver over Tuned radio frequency receiver? 6M
8. a) Explain the operation of Time Division Multiplexing with the help of neat sketches. 7M
b) Write short note on PPM generation techniques. 7M

| | | | | | | | | | | |
|----------------------|--|--|--|--|--|--|--|--|--|--|
| Hall Ticket Number : | | | | | | | | | | |
|----------------------|--|--|--|--|--|--|--|--|--|--|

Code : 1G354

R-11 / R-13

III B.Tech. I Semester Regular & Supplementary Examinations Nov/Dec 2015

Antennas and Wave Propagation
(*Electronics & Communication Engineering*)

Max. Marks: 70

Time: 03 Hours

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. a) Define the Antenna parameters Beam Efficiency, Directivity, Antenna aperture and Gain 8M
b) An antenna has a radiation resistance of 73 ohms and a lossy resistance of 7 ohms. If the power gain is 20, calculate the directivity and the efficiency of the antenna. 6M
2. a) State the following antenna theorems and bring out their importance in antenna measurements : i. Reciprocity theorem. ii. Maximum power transfer theorem. 7M
b) Derive the expressions for electric field in case of short current element and hence obtain the conditions for the field to be in Franhofer region. 7M
3. a) What are linear arrays? Compare Broadside array and End fire array. 7M
b) Explain the procedure for measuring the radiation pattern of a half wave dipole. 7M
4. a) Sketch and explain the constructional features of a Helical Antenna. 7M
b) Explain the working of Rhombic antenna. 7M
5. a) Derive an expression for aperture field distribution of a paraboloidal reflector. 7M
b) Bring out the differences between Active and Passive Corner Reflectors 7M
6. a) Explain ground wave propagation 8M
b) Explain the curved earth reflection 6M
7. a) Write the different modes of wave propagation. 8M
b) Explain fading and path loss. 6M
8. a) Write short notes on Virtual height and skip distance 10M
b) Explain multihop propagation 4M

Hall Ticket Number :

| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|

Code : 1G457

R-11 / R-13

III B.Tech. I Semester Regular & Supplementary Examinations Nov/Dec 2015

Computer System Architecture
(*Electronics & Communication Engineering*)

Max. Marks: 70

Time: 03 Hours

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. a) What are the basic functional units of a CPU? Explain. 7M
b) What is parity? Explain even and odd parity bit generation and design 3 bit odd parity generator and checker. 7M
2. a) What is a program interrupt? Explain about interrupt cycle and its operation with the help of Flowchart and Register transfer notation. 7M
b) Construct a 4-bit arithmetic circuit and explain its functionality. 7M
3. a) Discuss on stack operated instructions with examples. 7M
b) Give the overview and characteristics of RISC. 7M
4. a) Draw and explain typical hard wired control unit. 6M
b) Explain the following
(i) control word
(ii) control memory
(iii) control address register
(iv) micro instruction 8M
5. a) Draw a flowchart to explain the addition and subtraction of two fixed point numbers. 7M
b) Explain the Division operation for decimal numbers. 7M
6. a) A block set – associative cache consists of 64 blocks divided into 4 block sets. The main memory contains 4096 blocks, each consists of 128 words of 16 bits length. How many bits are there in main memory and in each of TAG, SET and WORD fields? 7M
b) Explain the virtual memory organization. 7M
7. a) Compare and contrast Programmed I/O and Interrupt Driven I/O 7M
b) Explain briefly about DMA controller. 7M
8. a) What is pipelining. Explain arithmetic pipeline in detail. 7M
b) Draw and explain centralized shared memory architecture. 7M

| | | | | | | | | | | |
|----------------------|--|--|--|--|--|--|--|--|--|--|
| Hall Ticket Number : | | | | | | | | | | |
|----------------------|--|--|--|--|--|--|--|--|--|--|

Code : 1G353

R-11 / R-13

III B.Tech. I Semester Regular & Supplementary Examinations Nov/Dec 2015

Digital IC Applications
(*Electronics & Communication Engineering*)

Max. Marks: 70

Time: 03 Hours

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. a) Design a CMOS transistor circuit for a Two input XOR gate and explain the operation with the help of function table? 7M
b) Explain about CMOS steady electrical behavior in brief. 7M
2. a) Distinguish CMOS logic and TTL logic circuits. 6M
b) With the help of diagram explain the working of three input ECL-NOR gate. 8M
3. a) Describe the design flow of HDL with an example. 8M
b) Describe the program structure in VHDL. 6M
4. a) Distinguish concurrent and sequential signal assignment statements with an example 7M
b) Describe conditional and switch statements used in VHDL with an example. 7M
5. a) Write a VHDL program for 4-bit grey to binary. 6M
b) Write a VHDL program for 3-8 decoder using case statement. 8M
6. a) Design 4-bit Barrel shifter and write a VHDL program for it. 8M
b) What is the purpose of Wait-statement in VHDL? 6M
7. a) Design Mod-7 counter using VHDL. 8M
b) Describe the importance of sensitivity list in a process statement. 6M
8. a) Distinguish Static and Dynamic RAM 6M
b) Describe the READ and WRITE operations of Dynamic RAM cell. 8M

Hall Ticket Number :

| | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|

Code : 1G352

R-11 / R-13

III B.Tech. I Semester Regular & Supplementary Examinations Nov/Dec 2015

Linear IC Applications

(*Electronics & Communication Engineering*)

Max. Marks: 70

Time: 03 Hours

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

1. a) Explain the need for current mirror circuit with the help of circuit diagram. 7M
b) Discuss the DC analysis of Dual input balanced output configuration of a differential amplifier. 7M
2. a) Explain the block diagram representation of a typical Op-Amp. 5M
b) Discuss the DC characteristics of an Op-Amp in detail. 9M
3. a) Draw and explain a differential amplifier with two Op-Amps. 7M
b) Draw and explain the Op-Amp ideal integrator. Mention its drawbacks. How these are overcome with Lossy integrator? 7M
4. a) What is the difference between a normal diode rectifier and a precision rectifier? Explain with neat diagrams. 7M
b) Design an Op-Amp Monostable multi for an output pulse duration of 1ms. 7M
5. a) Design an Active Notch filter to reject a frequency of 50 Hz. 8M
b) What are the advantages and disadvantages of active filters over passive filters? Explain. 6M
6. a) Draw and explain the monostable operation of 555 timer. 7M
b) Draw the block diagram of 565 PLL and explain its principle of operation. 7M
7. a) Explain the working principle of successive approximation ADC with a neat diagram. 7M
b) Explain the various DAC/ADC specifications in detail. 7M
8. a) Draw and explain a sample and hold circuit. 7M
b) Discuss the applications of analog switches. 7M
