SUBJECT CODE NO:- P-18
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(EC/ECT/E&C) Examination May/June 2017
Digital Image Processing
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q.No.1 & Q.6 are compulsory
ii) Solve any two questions from remaining questions for each section

Section A

Q.1	Answer any two:	
	a) List various digital image file formats used	05
	b) Give mathematical pair equation for i) DCT ii) DFT	05
	c) List Gray level Transformation equations with various input and output relationships	05
	d) Explain elements of visual perception in short	05
Q.2	a) Explain elements of digital Image Processing system with its block diagram in detail	08
	b) Explain basic and Geometrical transformations in detail	07
Q.3	a) What is image acquisition? Explain image acquisition process in detail	08
	b) Explain basics of frequency domain filtering with its block diagram in detail	07
Q.4	a) Write a short note on Haar function and slant Transform in detail.	08
	b) Explain properties of discrete cosine Transform.	07
Q.5	a) Explain smoothing filters in spatial domain filtering in detail	08
	b) Explain sharpening filters in frequency domain filtering in detail	07

SECTION 'B'

Q.6	Answer any two:	
	a) Find shape number for given chain code '322101'	05
	b) Give simple regional descriptors	05
	c) Explain Arithmetic coding with example	05
	d) Explain basic morphological processor (i) Opening (ii) Closing	05
Q.7	a) Explain any two edge detection operators in segmentation process.	08
	b) Explain chain code with one example in detail	07
Q.8	a) What are various redundancies? Explain any one in detail.	08
	b) Compare Lossy and Lossless image compression	07
Q.9	a) Explain variable length coding with example	08
	b) Explain JPEG image compression standard in detail	07
Q.10	a) Explain 'Convex Hull' processing in morphological processing using binary image	08
	b) Explain any one application in DIP system	07
	(i) MRI (ii) Biometric	

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Total No. of Printed Pages:1

SUBJECT CODE NO:- P-51
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(EC/ECT/E&C) Examination May/June 2017
Embedded Systems
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i)Q.No. 1 & 6 are compulsory.
ii)Solve any 2 questions from remaining from each section.
iii)Assume suitable data wherever necessary.
iv)Figures to right indicate full marks.

Section A

Q.No.1	Solve any 2 questions from following:-	10
	a)List & explain applications of embedded system in various areas.	
	b) Explain 3-stage pipeline structure of ARM processor.	
	c) Explain Barrel shifter operations.	
Q.No.2	a)What are the design challenges in ES. Explain in detail.	08
	b) Explain recent trends in ES.	07
Q.No.3	a)Explain different registers in ARM core architecture.	07
	b)What is core extensions? How is it achieved in ARM core? Explain in detail.	08
Q.No.4	a) Explain Logical instructions & conditional instructions in detail.	07
	b) Explain the following on chip features of ARM based LPC 2148 Microcontroller. i)Timers ii)PLL	08
Q.No.5	Write short note on a)CAN bus b)ARM processor family c)Load-store Instruction.	15

Section B

Q.No.6	Answer any two from the following	10
	a)Discuss in brief need of interfacing & interfacing technique.	
	b)Write a short note on Different RTOS services.	
	c)Explain MUCOS-II in detail.	
Q.No.7	a)Write an embedded 'C' program to blinks the LED's continuously with a small delay. The LED's are connected to the port 1 pins P1.24 to P1.31.	08
	b)Discuss the brief interfacing of input devices like LCD with ARM7 based microcontroller.	07
Q.No.8	a) What is semaphore? Explain the different types of semaphore.	08
	b) Explain in detail RTOS Kernel architecture.	07
Q.No.9	a)Discuss features of MUCOS-II RTOS in detail.	08
	b)Explain porting of RTOS in detail.	07
Q.No.10	Write a short note on:- a)ARM based smart card. b)RTOS mailbox c)Task scheduling.	15

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Total No. of Printed Pages:2

SUBJECT CODE NO:- P-82
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(EC/ECT/E&C) Examination May/June 2017
VLSI Design
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Question No.1 & Question No. 6 are compulsory
ii) Solve any two question from Q.no 2 to Q No.5
iii) solve any two question from Q. No 7 to Q. No 10
iv) Figure to the right indicate full marks
v) Assume suitable data if necessary

Section A

Q.1 Attempt any two from the following 10

a) What are the advantages of VHDL over Verilog

b) compare function and procedure

c) Explain block statement with example

d) Define the term controllability and observability

Q.2 a) Explain various operators in VHDL 07
b) Write VHDL code for four bit full adder using I-bit full adder on a component 08

Q.3 a) What is test bench? Write a test bench to verify design of AND gate 07
b) What are different types of architecture modeling in VHDL? Explain with example in brief 08

Q.4 a) with suitable schematic explain operation of TAP controller 07
b) Write a VHDL code to design 3:8 decoder 08

Q.5 Write short notes on any three 15
i) Architecture of XC9500
ii) package and library
iii) stuck at fault model
iv) JTAG technology

Section B

Q.6 Attempt ant two form the following 10
a) CMOS Technology Vs Bipolar technology
b) Static and dynamic power dissipation in CMOS
c) I-V characterization of ideal nMOS transistor
d) Explain self-aligned process in CMOS

Q.7 a) What are the effects of short channel length on the performance of MOS Transistor? Explain in brief. 07
b) Explain with the help of neat diagram operation of CMOS inverter 08

Q.8 a) Explain n –well process for CMOS fabrication 07
b)Sketch schematic for the following equation using CMOS 08
i) $y = \overline{A + B(C + D)}$

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ii) y= $\overline{AB + C\ (D + E)}$

Q.9 a) Explain velocity saturation and mobility degradation in CMOS transistor 07

b) Draw layout of CMOS inverter circuit and explain the layout design rules 08

Q.10 Write short notes on (any three) 15

a) Body effect

b) Stick diagram

c) Noise margin & delay calculation

d) CLM

Total No. of Printed Pages:2

SUBJECT CODE NO:- P-115
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(ECT/E&C) Examination May/June 2017
Microwave & Radar Engg. (ECT/E&C)
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1) Q.1 and Q.6 are compulsory
2) Solve any two from Q.2, Q.3,Q.4and Q.5
3) Solve any two form Q.7, Q.8, Q.9 and Q.10
4) Figure to the right indicate full marks
5) Assume suitable data if necessary

Section A

Q.1	Write a short note on any Two	10
	i) Distinguish between Waveguides and Transmission Lines	
	ii) Parametric Amplifier	
	iii) Microwave Imaging	
	iv) IMPATT Diode	
Q.2	a) Explain the propagation of TE mode in Rectangular Waveguide & derive the expression for cut off Freq.	8
	b) Derive the expression for cut off Frequency phase Velocity and phase constant	7
Q.3	a) Draw and explain the working of Two Cavity Klystron Amplifier	8
	b) Compare TWT with Klystron & Magnetron	7
Q.4	a) Explain briefly Microwave IC Fabrication	8
	b) Explain EMI & EMC in detail	7
Q.5	a) Explain the working of Magic tee with its scattering matrix	8
	b) Draw & Explain the schematic diagram of TWT amplifier	7

Section B

Q.6	Write short notes on any Two: i) Staggered Frequencies ii) Radar Frequencies iii) Digital MTI Processing iv) Sequential Lobing	10
Q.7	a) Derive free space Radar Equation. Explain different factor limitation the range of Radar	8
	b) Draw & Explain the basic block Diagram of Radar System with its application	7
Q.8	a) What is the delay line canceller? Draw & explain the block diagram of single delay line canceller	8

b) Explain limitation of MTI Radar System 7

Q.9 a) Draw & Explain the block diagram of amplitude comparison mono pulse Tracking 8

b) Explain the working of conical Scan Radar with the help of Diagram 7

Q.10 a) Draw & Explain the block diagram of CW- Radar System 8

b) Explain low Angle Tracking 7

Total No. of Printed Pages:2

SUBJECT CODE NO:- P-160
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(ECT/ E&C) Examination May/June 2017
Elective-I: Artificial Neural Network & Fuzzy Logic (ECT/E&C)
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q1 and Q6 are compulsory.
ii) Solve any two questions from Q.2, Q.3, Q.4 and Q.5 in Section A.
iii) Solve any two questions from Q.7, Q.8, Q.9 and Q.10 in section –B.
ii) Figures to the right indicate full marks.
iii) Assume suitable data wherever necessary and mention it clearly.

Section A

Q.1 Solve any Two 10
a) State application of Kohonen self-organizing maps
b) What are Dendrites
c) What are the three basic elements of a neuronal model

Q.2 a) What are the advantages and disadvantages of Neural networks 07
b) Differentiate between supervised and unsupervised learning 08

Q.3 a) Explain in detail supervised learning. How it is different from unsupervised learning 07
b) What is *Adaline*?. Explain in detail 08

Q.4 a) Explain in detail is content addressable memory 07
b) State the outer products rules used for training pattern associative networks 08

Q.5 Discuss the operation of single neuron system. A neuron j receives inputs from four other neurons whose activity levels are 10, -20, 4 and -2. The respective synaptic weights of the neuron j are 0.8, 0.2, -1.0, and -0.9. Calculate the output of neuron for the following two situations. 15
a) The neuron is linear.
b) The neuron is represented by a McCulloch-Pitts model. Assume that the bias applied to the neuron is zero.

SECTION B

Q.6 Solve any two 10
a) Define characteristic function
b) State operations on crisp sets
c) Define prototype of the set.

Q.7 Using your own intuition, develop fuzzy membership functions on the real line for the fuzzy number “approximately 2 AND approximately 8”, using the following function shapes: 15
(a) Symmetric triangles
(b) Trapezoidal
(c) Gaussian functions

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Q.8 Using your own institution and your own definitions of the universe of discourse, plot fuzzy membership functions for the following variables: 15

Weight of people

(a) Very light

(b) Light

(c) Average

(d) Heavy

(e) Very heavy

Q.9 a) Explain multi attribute decision making in detail 07

b) Discuss multi person decision making in detail 08

Q.10 Let the sets A,B,C and E be given as follows E= all students enrolled in the university cricket club = 600, A (male students) = 300, B(bowlers) = 225 and C (batsmen)=160. Let the number of male students who are bowler (A ∩B) be 100, 25 of whom are batsmen too (A ∩B ∩C), and the total number of male students who are batsmen (A∩C) be 85. Determine the number of students who are: 15

i. Females

ii. Not bowlers

iii. Not batsmen

iv. Female students who can bowl.

Total No. of Printed Pages:2

SUBJECT CODE NO:- P-161
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(ECT/ E&C) Examination May/June 2017
Elective-I: Wireless Mobile Communication (ECT/E&C)
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B (i) Q.1 and Q.6 are compulsory.
(ii) Solve any two from Q.2, Q.3, Q.4 and Q.5
(iii) Solve any two from Q.7, Q.8, Q.9 and Q.10.
(iv) Assume suitable data, if necessary

Section A

Q.1 Attempt any Two 10
(a) Draw the structure of Cellular system & List out its advantages & disadvantages
(b) Comment on evolution of mobile radio communication.
(c) Write a short note on Wireless Data Services.
(d) Explain Blue tooth technology with features & architecture

Q.2 (a) Explain the cellular system architecture & explain its operation stepwise. 8
(b) What is multiplexing? Tabulate the difference between TDMA, FDMA, CDMA & SDMA 7

Q.3 a) A cellular system with a total BW of 50 MHz uses two 25 KHz simplex channels to provide full duplex voice and control channels. Assuming that the system uses a 12-cell reuse pattern & 1.5 MHz of the total BW is allocated for control channels. Calculate: (i) Total available channels, (ii) Number of control channels and (iii) Number of voice channels available per cell. 7
b) What are the ways for improving coverage and capacity in cellular systems? Compare them 8

Q.4 (a) Compare & contrast 1G, 2G, 3G & 4G wireless networks with reference to duration, features, examples, 8
(b) List out the features of SS#7. Explain its architecture in detail 7

Q.5 (a) Define following terms of communication 8
(i) BSS & BTS (ii) Frequency Reuse & Roaming
(iii) PSTN & PLMN (iv) Full Duplex & Half Duplex Systems
b) What is GPRS? List out the features & explain its working. 7

Section B

Q.6 Attempt any Two. 10
(a) Explain GSM frame structure with suitable diagrams
(b) Define a protocol & explain WAP
(c) Define mobile operating system. List out the features of a good mobile OS.
(d) Explain IEEE 802.11 wireless standard with the architecture.

Q.7 (a) Draw the GSM architecture & explain the functions of each section in detail 8
(b) What are the types of channels in GSM? Explain any one 7

Q.8	(a) What is working principle of DTH service? Explain with features & architecture	8
	(b) Explain mobile IP & PRMA in details	7
Q.9	(a) Explain CDMA technology with neat diagram & suitable examples	8
	(b) Compare & contrast RIM & iOS mobile operating systems.	7
Q.10	(a) Explain MTC and MOC with the help of block diagram & message flow diagram.	7
	(b) Explain Android operating system with different versions in details.	8

Total No. of Printed Pages:2

SUBJECT CODE NO:- P-163
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(EC) Examination May/June 2017
Elective-I: Advanced Power Electronics (EC)
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Question No.1 from Section A and Question No.6 from Section B are compulsory.
ii) Attempt any two questions from Q.2 to Q.5 in Section A and Q.7 to Q.10 in Section B.
iii) Assume suitable data wherever necessary.
iv) Symbols have their usual meanings unless stated.

Section A

Q.1 Solve any two of the following 10
i) State and explain control methods used in DC – DC converters.
ii) Differentiate between linear power supply and switching power supply
iii) Explain switching characteristics of IGBT.
iv) Draw thermal equivalent circuit for thyristor and explain its parameters.

Q.2 a) Explain the merits of isolated dc – dc converters 07
b) Explain in detail snubber circuit design 08

Q.3 a) Describe electrical characteristics of GTO 07
b) With neat circuit diagram explain the operation of buck converter. 08

Q.4 a) Explain the operation of half bridge converter. State its merits and demerits. 07
b) With neat circuit diagram and wave forms explain the operation of forward convertor 08

Q.5 Write short note on (any three) 15
i) Heat Sink design
ii) Fly back Convertors.
iii) Multilevel DC-DC circuits
iv) Power integrated circuits

Section-B

Q.6 Solve any two of the following 10
i) What do you mean by clean power?
ii) Why are multiple switches balanced, isolated dc-dc convertors used in SMPS?
iii) Why is simulation of power Electronics Circuits needed?
iv) State the performance parameters of convertor

Q.7 a) What are various PWM techniques? Explain their use in voltage control. 08
b) Explain the need of antiparallel diodes in inverter. How does it affect the operation of the inverter? 07

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Q.8	a) Explain importance of simulation of power circuits.	07
	b) Discuss the role of power Electronics in wind energy utilization	08
Q.9	a) Draw and explain TCR – FC and TSC – TCR Circuits.	07
	b) Draw the block diagram of hybrid UPS and explain its operation	08
Q.10	Write short notes on (any three)	15

i) Redundancy in UPS
ii) Power Electronics in automation
iii) Fuzzy logic control
iv) Multilevel DC – AC converter.

Total No. of Printed Pages:1

SUBJECT CODE NO:- P-164

FACULTY OF ENGINEERING AND TECHNOLOGY

B.E.(EC) Examination May/June 2017

Elective-I: Consumer Electronics (EC)

(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i)Q No 1 and 6 are compulsory
ii) Solve any two question from remaining questions from each section A & B
iii) Assume suitable data if required

Section A

Q.1	a) Draw block diagram of PA system and explain working	5
	b) State advantages and features of i-phone	5
Q.2	a) Write short note on android Technology & state its features	7
	b) Explain the feature of 3 G mobile Handset	8
Q.3	a) Explain the elements of Yogi uda Antenna	7
	b) Explain HDTV	8
Q.4	Explain the working principle of microwave oven	7
	b) Explain block diagram of vaccume cleaner	8
Q.5	a) Explain Dolby digital system	8
	b) Give comparison between LED TV & LCD TV	7

Section B

Q.6	a) Enlist the different printing & Recording devices & state their Application	5
	b) Give comparison between LASER printer & INKJET printer	5
Q.7	a) Explain the working principle of electronic scanner	8
	b) Explain the working of DVD player	7
Q.8	a) Why LED lamps are better than other lamps	8
	b) Explain water purifier	7
Q.9	a) Explain biometric sensor	7
	b) Explain electronic voting machine	8
Q10	a) Explain the working of ATM	7
	b) Explain product safety & liability issues	8

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Total No. of Printed Pages:2

SUBJECT CODE NO:- P-165
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(EC/ECT/ E&C) Examination May/June 2017
Elective-I: Android Technology (ECT/E&C/EC)
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i)Question 1 & 6 are compulsory
ii) Attempt any two question from Q.2 to Q.5 and any two question from Q7 to Q10

Section A

Q.1	Attempt any two	10
	a) Write a program in Java to display table of any number taken from user	
	b) Explain type casting in java with suitable code	
	c) Distinguish between abstract classes & interfaces	
Q.2	a) Give detail of data types in java	7
	b) Explain switch case statement in java with suitable program	8
Q.3	a) write a program to implement single inheritance	7
	b) Explain multiple inheritance using interfaces	8
Q.4	a)Explain Android Architecture with diagram	7
	b) Give detail of creating first Android application of “Hello world”	8
Q.5	Write short note on any three a) Java virtual Machine b) constructor in java c) Final classes d) Packages in Java e) Advantages of exception handling	15

Section B

Q.6	Attempt any two a) What is significance of manifest file? b) Explain the concept of Intent c) How to send SMS in android using intent? Explain in short	10
Q.7	a) What are the major from widgets in Android? Give detail of any one of them	7
	b) Explain the lifecycle of on activity & various stages if goes through	8
Q.8	a) How to obtain latitude & longitude? Explain with suitable code	7
	b) How to monitor changes in phone state in Android	8

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Q.9	a) How to play & pause audio / video using class media player	7
	b) How to programmatically enable Bluetooth in Android	8
Q.10	Write short note on any three a)Linear layout b) Toast c) Geocoder d) Recording audio in Android e) Overview of networking	15

SUBJECT CODE NO:- P-199

FACULTY OF ENGINEERING AND TECHNOLOGY

B.E.(EC/ECT/ E&C) Examination May/June 2017

Elective-I: Advanced Industrial Automation (ECT/E&C/EC)

(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q.No.1 from section A and Q.No.6 from section B are compulsory.
ii) Attempt any two questions from the remaining questions in each section

Section A

Q.1 Solve any five questions from following 10

a. Enlists the different process variables
b. Define measured, manipulated & load variable
c. Define i) Air to open II) air to close
d. Define i) Range ability II) Turndown.
e. Sate need of plant automation
f. What do you mean by line & dead zero?
g. Enlist different manufactures of PLC.

Q.2 A Draw & explain a standard symbol set for process loop components. 08
B Explain volume booster & pressure booster. state its application. 07

Q.3 A With the help of suitable example, explain plant automation. 08
B Explain proximity sensors with its types. 07

Q.4 A What is significance of current to pneumatic converter? Explain it in detail. 08
B Explain process of temperature control loop. 07

Q.5 A How drives are beneficiary to industry? Explain DC drive 08
B Draw & explain construction & working of stepper motor. 07

Section B

Q.6 Solve ay five from following 10

a. Draw 3/2 push button operated spring returned NC valve
b. Enlist different timers.
c. Define SCADA.
d. What are the functions of DCS?
e. Draw one line symbol of relay & contractor
f. What do you mean by modular PLC.
g. Enlist the practice command of “HART”

Q.7 A Develop sequential control logic of two motors (M_1,M_2) using LAD diagram 08
B Explain DCS architecture. How it help to upgrade ERP. 07

Q.8 A Describe the following functions of DCS 08

A. Third party interface
B. Database management

B Differentiate fixed & modular PLC 07

Q.9	A	What is SCADA? Explain various functions of SCADA.	08
	B	Explain HART with its implementation examples.	07
Q.10	A	Explain the structure of foundation field bus state advantages of foundation bus.	08
	B	Draw & explain PLC Architecture in detail.	07

Total No. of Printed Pages:1

SUBJECT CODE NO:- P-203

FACULTY OF ENGINEERING AND TECHNOLOGY

B.E. (ECT/E & C) Examination May/June 2017

Antenna Theory & Wave Propagation [Elective-II](ECT & E&C)

(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Question No.1 from section A & question No.6 from section B are compulsory.
2. Solve any two questions from Q.2, Q.3, Q.4, & Q.5.
3. Solve any two questions from Q.7, Q.8, Q.9, & Q.10.

Section A

Q.1 Write a short note on any two 10
- a) Friis transmission equation.
- b) Parabolic reflector.
- c) Reciprocity of antenna
- d) Effective aperture.

Q.2
- a) Describe the role of dipoles in mobile communication. 07
- b) Explain E- plane spectral Horn in detail with necessary diagram. 08

Q.3
- a) Explain in detail the fields and pattern of Infinitesimal dipole. 07
- b) Illustrate Babinet's principle with neat diagram. 08

Q.4
- a) What are the design considerations of circular aperture? 07
- b) An antenna has a radiation resistance of 72Ω, a loss resistance of 8Ω and a power gain of 12dB. Determine antenna efficiency and directivity. 08

Q.5
- a) Describe the design procedure for pyramidal horn. 07
- b) Explain the term Beam width and Bandwidth of antenna. 08

Section B

Q.6 Write a note on any two 10
- a) Yagi a uda antenna
- b) Rectangular patch antenna
- c) Refractive index
- d) Log – periodic antenna

Q.7
- a) Describe smart antenna in detail. 07
- b) Explain proximity feed and aperture coupted feed technique for microstrip antenna. 08

Q.8
- a) Explain ground wave propagation and give its advantages & disadvantages. 07
- b) Describe in detail Broadband antenna. 08

Q.9
- a) Describe various layers of ionosphere and their effect on wave propagation. 07
- b) Explain antenna arrays with broadside array and end – fire array. 08

Q.10
- a) Describe the terms critical frequency, maximum usable frequency, virtual height and skip distance. 07
- b) Explain any two methods of analysis of microstrip antenna with neat diagrams. 08

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Total No. of Printed Pages:1

SUBJECT CODE NO:- P-223

FACULTY OF ENGINEERING AND TECHNOLOGY

B.E. (EC/ECT/E&C) Examination May/June 2017

Computer Communication Network

(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i)Q.1 & Q.6 are compulsory.
ii)Attempt any two questions from remaining in each section.
iii)Figures to the right indicate full marks.

Section A

Q.1	a)Compare & contrast between LAN, MAN & WAN.	05
	b)Draw & explain client server model	05
Q.2	a)Explain circuit switching & packet switching in detail.	08
	b)Explain TCP/IP reference model in detail.	07
Q.3	a)What are the error detection techniques? Explain any one in detail.	08
	b)Write a note on stop & wait protocol.	07
Q.4	a)Explain SMTP & SNMP in detail.	08
	b)Write a short note on TELNET.	07
Q.5	a)Explain E-mail with its basic functions.	08
	b)Write a short note on byte-stuffing.	07

Section B

Q.6	a)Explain user network interface configuration of ISDN.	05
	b)Write short note on cryptography.	05
Q.7	a)Explain B-ISDN protocol architecture.	08
	b)Write a short note on ISDN addressing.	07
Q.8	a)Explain in brief ATM cell format.	08
	b)Give the classification of frame relay virtual circuit.	07
Q.9	a)Explain secret key algorithm.	08
	b)Explain different coding used in cryptography.	07
Q.10	a)Explain modern cryptography techniques.	08
	b)Explain the transmission structure of ISDN.	07

Total No. of Printed Pages:2

SUBJECT CODE NO:- P-253
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E. (ECT/EC/E&C) Examination May/June 2017
Optical Fiber Communication
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Questions no. 1 and questions no.6 are compulsory.
2. Attempt any two from remaining questions from section A and B.
3. Figures to the right indicate full marks.
4. Assume suitable data wherever necessary.

Section A

Q.1 Explain the following (attempt any five) 10
i. Graded index fiber
ii. Numerical aperture
iii. Band width – length product
iv. Index profile
v. Multimode fiber
vi. Bit error rate
vii. Normalized frequency.

Q.2 a) Explain the advantages of optical fiber over coaxial cable and copper wire. 08
b) Draw and explain the schematic diagram consisting of the main components of a fiber communication system. 07

Q.3 a) Enlist the various losses taking place in optical fiber. Explain bending loss in detail. 08
b) Explain various characteristics of optoisolators. 07

Q.4 a) What is LASER? Comment on stimulated emission and spontaneous emission. What are the requirements to be satisfied for laser action? 10
b) The total efficiency of an injection laser active region is 18% (far GaAs). The voltage applied to the device is 2.5 V and the bandgap energy for GaAs is 1.43ev. Calculate the external power efficiency of the device. 05

Q.5 Write short notes on the following
i. Photo – detector characteristics 05
ii. Reach through APD 05
iii. Classification of photo – detectors 05

Section B

Q.6 Explain the following (attempt any five) 10

i. Power margin
ii. Link power budget
iii. Photonic switching
iv. Optical Ethernet
v. Eye design test
vi. SDH tracking
vii. OTDR

Q.7 a) Explain 'SONET' in detail. Give its advantages and disadvantages over other networks. 08

b) What is an optical switch? What should be the characteristics of the materials used in the fabrication of optical switches? 07

Q.8 a) Comment on the factors influencing the system choice in fiber optic communication link. 08

b) With the help of neat block diagram explain how an OTDR can be used in fiber loss measurement? 07

Q.9 a) What is WDM network? What are its features? Explain in detail. 08

b) Why OPM is used? Explain the three layers of OPM. 07

Q.10 Write short notes on the following 15

i. Rise time budget
ii. Noise penalties
iii. Sensor applications.

Total No. of Printed Pages:1

SUBJECT CODE NO:- P-284
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E. (ECT/E&C) Examination May/June 2017
Consumer Electronics (ECT/ E&C)
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q. No 5 and Q No 10 are compulsory
ii) Solve any two from remaining question from section A and section B each
iii) Assume suitable data if required

Section A

Q.1	a) Explain the features of Android technology	08
	b) Write short notes on EPADX	07
Q.2	a) Explain the interactive television and its importance	08
	b) Explain the working of video conferencing	07
Q.3	a) Explain the working of microwave oven	08
	b) Explain the working of washing machine	07
Q.4	a) Explain the working of electronics weighting machine	08
	b) Explain the block diagram of the PA system	07
Q.5	Write short notes on any two	
	a) Interactive TV	05
	b) Air Conditioner	05
	c) Vacuum cleaner	05

Section B

Q.6	a) Explain the working of inkjet printers	08
	b) Draw block diagram of DVD player and explain its working	07
Q.7	a) What do you mean by biometric sensor? Explain an example of biometric sensor.	08
	b) Write brief notes on house Automation system	07
Q.8	a) Explain the working of solar lamps	08
	b)Explain working of LED lamp and enlist its Application	07
Q.9	a) Explain EVM and its advantages	07
	b) Explain the working principle of CFL	08
Q.10	Write short notes on any two	
	a) Security issues	05
	b) electrical safely issues	05
	c) Biometric Attendance monitoring system	05

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Total No. of Printed Pages:2

SUBJECT CODE NO:- P-285
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E. (EC) Examination May/June 2017
Applied Digital Signal Processing
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q. No 1 and Q. No 6 are compulsory
ii) Attempt any two other question from the reaming question of each section

Section A

Q.1	Solve any two	10
	a) Explain polyphase filter structures	
	b) Explain LMS algorithm in detail	
	c) Explain covariance method in linear prediction	
Q.2	a) Explain sampling rate conversion by non-integer factor	08
	b) Explain recursive least square algorithms in detail	07
Q.3	a) Explain forward and backward linear prediction in detail	08
	b) Explain Lafitte structure method for linear prediction	07
Q.4	a) Explain adaptive filter as noise cancellation	08
	b) Explain two channel quadrature mirror filter bank	07
Q.5	Write short notes on (any three) a) Multirate signal processing b) Lattice structure method c) Covariance method and Auto correlation AR, MA, & ARMA	15

Section B

Q.6	Solve any two a) Explain review of deterministic signal and random signal b) Explain welch method c) Explain fixed and floating point representation d) Explain circular buffering for DJP	10
Q.7	a) Explain power spectrum estimation of correlation function	07
	b) Explain estimation of autocorrelation and power spectrum of random signal	08
Q.8	a) Explain Architecture for DSPs in detail	08
	b) Explain MAC unit Barrel shifter in detail	07

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Q.9	a) Explain application of speech and telephone in detail	08
	b) Explain implementation of basic algorithms like FIR, IIR filters	07
Q.10	Writer short notes on (any three) a) Application of DSP in audio systems b) Bartlett window c) Fixed and floating point representation d) power spectrum estimation	15

Total No. of Printed Pages:2

SUBJECT CODE NO:- P-326
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E. (ECT/E & C) Examination May/June 2017
Applied Digital Signal Processing (ECT & E&C) [Elective-II]
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q. No.5 from Section A & Q.10 from Section B are compulsory.
ii) Attempt any two questions from the remaining questions in each section.
iii) Assume suitable data, if necessary & state it clearly.

Section A

Q.1 a) Consider the discrete time signal. 08
X(n) = [1, 2, 3, 4]
Determine the up sampled version of the signal for the sampling rate multiplication factor
i) I = 2 ii) I = 3
b) Explain in detail the RLS algorithm 07

Q.2 a) Explain how noise introduced in the system can be cancelled using adaptive filters. 08
b) What are the characteristics of polyphase filters? How are the polyphase structures reticent? 07

Q.3 a) Explain in detail the L.M.S. adaptive algorithm. 08
b) Explain multistage interpolation. 07

Q.4 a) Write in detail autoregressive & moving average process. 08
b) Explain forward linear prediction. 07

Q.5 Write short notes on (Any Two) 10
a) Lattice structure method
b) QMF bank
c) Sampling rate conversion by non-integer factor
d) Covariance method.

Section B

Q.6 a) Explain the various non-parametric method of power spectrum estimation. 08
b) Write characterization of random signal. 07

Q.7 a) Give the estimate of auto correlation function & power density for random signal. 08
b) Explain application of multi rate signal processing. 07

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Q.8	a) Explain in detail various on-chip peripherals of TMS 320C54XX, processor.	08
	b) Describe in brief the implementation of basic algorithms like FIR, IIR filters.	07
Q.9	a) Explain application of DSP in image processing	07
	b) Explain the deterministic signals in detail.	08
Q.10	Write short notes on <u>any two</u>	10
	a) Selection criteria of DSP processor.	
	b) Application of DSP in communication.	
	c) Barrel Shifter	
	d) Power Spectra.	

Total No. of Printed Pages:2

SUBJECT CODE NO:- P-327
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E. (ECT/E & C) Examination May/June 2017
Robotics (ECT & E&C) [Elective-II]
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B 1) Assume suitable data if necessary
2) Q.no.1 and Q.no.6 are compulsory. Then solve any two question from the remaining question in each sec A and sec B

Section A

Q.1	a)	What are different joint?	02
	b)	What are components of robot system?	02
	c)	What is dynamic constraints?	02
	d)	What are matrix operations?	02
	e)	What is kinematics of Robotic arm?	02
Q.2	a)	Explain the basic structure of robotic arm.	08
	b)	Explain the term automation and Robotics	07
Q.3	a)	Explain Newton's and ruler's equations	08
	b)	What is present and future trends in Robotic. explain	07
Q.4	a)	Consider a vector $\overline{v} = 2i + j + k$.give its homogeneous representation if $s = 0,1,2\& -10$	08
	b)	What is D-H matrix. explain	07
Q.5	a)	If $\overline{x} = 3i + 3j + 3k$ & $\overline{y} = i + j + k$. find $\overline{x}.\overline{y}$ &$\overline{x} \times \overline{y}$ in homogenies coordinates.	08
	b)	A frame F has been moved of units along the x axis and 5 units along the z axis of the ref. frame .find the new location of the frame $F = \begin{bmatrix} .527 & -.574 & .628 & 3 \\ .369 & .819 & .439 & 2 \\ -.766 & 0 & .643 & 7 \\ 0 & 0 & 0 & 1 \end{bmatrix}$	07

Section B

Q.6	a)	What is object recognition?	02
	b)	What are different electrical actuators?	02
	c)	What is image processing?	02
	d)	State different proximity sensors	02
	e)	What are different grippers?	02

Q.7	a)	What is image description, sensing and digitization?	08
	b)	What are different applications of machine vision system?	07
Q.8	a)	Explain Jacobian in terms? D-H matrix	08
	b)	Explain obstacle avoidance system	07
Q.9	a)	What are different touch and slip sensors? Explain any one touch and slip sensors	08
	b)	What are different force sensors? Explain any one	07
Q.10	a)	Explain magnetic end effector	08
	b)	Explain in detail adhesive grippers	07

Total No. of Printed Pages:2

SUBJECT CODE NO:- P-328
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E. (EC) Examination May/June 2017
Microwave and Radar Engineering (EC) [Elective-II]
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1) Q. No.01 and Q. No.06 are compulsory.
2) Solve any Two questions from Q.2 to Q. No.05.
3) Solve any Two questions from Q. No.7 to Q. No.10.
4) Assume suitable data wherever necessary.

Section A

Q.1 Write short note on any two 10
a) Magnetron Oscillator
b) Scattering matrix
c) Tunnel diode

Q.2 a) Derive the expression of cut off freq. and characteristic impedance of TE mode in rectangular waveguide. 08
b) Explain the various microwave passive components 07

Q.3 a) What is isolator and resonator? Explain the principle of operation of Isolator 07
b) Explain the working of Gunn diode with the help of layered structure, energy level diagram and I.V. characteristic. 08

Q.4 a) Compare TWT with klystron and Magnetron. Why slow wave structures are used in TWT? 07
b) An air-filled rectangular waveguide has dimensions of 6 x 4 cm propagates a signal at a frequency of 5 Ghz. Compute, i) Propagation constant 08
ii) Cut-Off frequency
iii) Phase velocity
iv) Group velocity
Here, $N = 4\pi \times 10^{-7}$ H/m
$\in = 8.854 \times 10^{-12}$ F/m

Q.5 a) State the application of microwave in civil and medical fields in detail. 07
b) Describe the Fabrication procedure for microwave IC Fabrication 08

Section – B

Q.6	Write short notes on <u>any Two</u> 1) Matched Filter used in RADAR receiver. 2) Monopulse Tracking 3) Staggered pulse repetition Frequency.	10
Q.7	a) Derive the simple Form of Radar equation and explain in brief the RADAR block diagram.	08
	b) Explain in briefly the system losses and propagation effects in RADAR communication.	07
Q.8	a) Describe the use of DLC in MTI radar along with blind speed.	08
	b) Explain the limitations of MTI radar in detail	07
Q.9	a) What are phased array and planner array in a tracking system? Explain.	07
	b) What are the techniques for angle tracking in Radar? Explain conical scanning techniques with block diagram.	08
Q.10	a) Explain Radar cross-section fluctuations with the four Swerling target model.	07
	b) What is integration of pulses in Radar? Derive the maximum Radar range equation with the integration of pulses.	08

Total No. of Printed Pages:1

SUBJECT CODE NO:- P-329

FACULTY OF ENGINEERING AND TECHNOLOGY

B.E. (EC/ECT) Examination May/June 2017

Wireless & Mobile Communication (EC) [Elective-II]

(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B 1) Q.No.1 and Q.No.6 are compulsory.
2) Solve any two questions from Q2, Q3, Q4, Q5 in Section A.
3) Solve any two question from Q7, Q8, Q9 & Q10 in Section B.

Section A

Q.1	Attempt any two a) Compare TDMA & CDMA b) Write short note on adjacent channel interference c) Write short note on DTH	10
Q.2	a) Explain frequencies for radio transmission in detail b) How frequency is reused in wireless system design	07 08
Q.3	a) How coverage & capacity can be improved in cellular system. Explain any two methods. b) Explain overview of 2G, 3G & 4G wireless system	08 07
Q.4	a) Explain architecture of ISDN in detail b) Explain Bluetooth in detail with its architecture	08 07
Q.5	a) Explain CDPD data service in detail b) Explain need of hand-off & hand-off process in detail	08 07

Section B

Q.6	Attempt any two a) Write short note on RIM b) Explain GSM features & services of GSM. c) Write short note on zigbee	10
Q.7	a) Explain architecture of GSM in detail b) Explain in detail “802.11” standard in detail	08 07
Q.8	a) Explain frame structure of GSM in detail b) Explain WAP architecture in detail	07 08
Q.9	a) Explain architecture of CDMA in detail b) Explain message flow for MTC & MOC	08 07
Q.10	a) Write in brief PRMA protocol b) Explain Android O.S. with different versions.	07 08

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Total No. of Printed Pages:2

SUBJECT CODE NO:- P-330
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E. (EC) Examination May/June 2017
Industrial Drives & Control (EC) [Elective-II]
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B Question number one and six are compulsory. Solve any two questions from remaining for each section. Assume suitable data if necessary.

Section A

Q.1	Solve any two from following. a. Explain classification of DC to DC converter b. Write advantages of Electrical Drive system. c. State applications of Electric Drive	10
Q.2	a. Explain factors affecting selection of electrical drive. b. Explain speed torque characteristics of PMDC motor drive	08 07
Q.3	a. Explain classification of chopper in detail. b. Explain close loop method of dynamic model speed/position control of dc motor.	08 07
Q.4	a. Explain Buck and Boost converter in detail b. Explain the operation of three phase full bridge converter with RL load.	08 07
Q.5	a. Explain speed torque characteristics of series motor drive. b. Consider a pmdc motor with following parameters. T_{rated} =12 Nm, N_{rated}=4000RPM, K_T=0.5N/A, K_E=53v/1000rpm, R_a=0.37ohm, τ_e=4.05ms, τ_m=11.7ms. Calculate terminal voltage V_t, steady state if motor required to deliver a torque of 5Nm at a speed of 1500 rpm	08 07

Section B

Q.6	Explain any two from following a. Vector control model for induction motor b. Harmonic Standard c. Space vector PWM.	10
Q.7	a. Explain the operation of current source inverter b. Explain torque speed characteristics of induction motor	08 07

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Q.8	a. A four pole 12hp, 450v induction motor is supplying a rated power to a centrifugal load at 50Hz frequency. Its rate speed is 2000 rpm. Calculate its speed, slip frequency, and slip when it is supplied by 230 V, 40Hz source.	08
	b. Explain the active shaping of input line current using converter	07
Q.9	a. Explain constant flux speed control of induction motor.	08
	b. Explain classification of voltage source inverter.	07
Q.10	a. Explain the characteristics of induction motor below and above rated speed	08
	b. Explain the impact of non-sinusoidal excitation of induction motor	07

Total No. of Printed Pages:2

SUBJECT CODE NO:- P-331
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E. (E&C/EC) Examination May/June 2017
Advanced Industrial Automation - II
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q. No.1 to 6 are compulsory.
ii) Solve any two questions from remaining from Each section.

Section A

Q.1 Solve any Five 10
a) Draw 4/2 Double pilot pneumatic operated valve.
b) Enlist the safety techniques of Automation.
c) Give the application Areas of pneumatics.
d) Give the significance of F.L.R. unit.
e) What are the different safety standards?
f) What do you mean by P.I. diagram
g) Enlist the SCADA protocols.

Q.2 a) What are the Basic components installed on control panel? Explain in detail. 08
b) Explain the differences between SCADA & PLC for any 7 points. 07

Q.3 a) Explain significance of pneumatic time delay valve with suitable example. 08
b) Describe a SCADA system with neat configuration diagram. 07

Q.4 a) Develop pneumatic position control circuit for $A^- B^- A^+ B^+$ sequence 07
b) Describe safety guidelines of Automation with suitable example. 08

Q.5 a) Explain the comprehensive security levels for General SCADA system 08
b) Explain different types of valve used in pneumatic system. 07

SECTION – B

Q.6 Solve any five 10
a) State Pascal law.
b) Enlist Applications of Hydraulic System.
c) What do you mean by Hydrostatic?
d) Give significance of Non-return valve.
e) What are the objectives of Automation?
f) What do you mean by B.O.M.?
g) Give significance of kick-off meeting.

Q.7	a) Develop a yogurt mixer with suitable operational diagram & explain in detail.	08
	b) Find out hydrostatic pressure in Bar at bottom of container filled with oil and has density of 1.2 kg/dm^3 and its height is 1200mm.	07
Q.8	a) Explain Kiln Automation in detail.	07
	b) Design & Explain sequence control circuit for clamp. Drill & punch operation using pressure relief valve.	08
Q.9	a) Draw & Explain Automation control strategy of water treatment plant.	08
	b) Explain the hydraulic system with its block schematic.	07
Q.10	a) Design & Develop Dough maker using operational diagram, ladder logic & control panel design	10
	b) Explain control strategy of irrigation canal Automation.	05

Total No. of Printed Pages:1

SUBJECT CODE NO:- P-332

FACULTY OF ENGINEERING AND TECHNOLOGY

B.E. (ECT) Examination May/June 2017

Solar Photo Voltaics Design EL- II

(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q.No.5 and Q.No.10 are compulsory.
ii) Solve any two questions from remaining from each section.
iii) Assume suitable data whenever necessary and mention it clearly.

Section A

Q.1	a)	How are directions in crystal lattice specified? What is difference between plane that is represented by (100) & {100}	08
	b)	Why there is need of sustainable energy sources?	07
Q.2	a)	Drift velocity of electrons in S_i is 10^5 cm/s and concentration of electrons is 10^{17} per cm^3. Estimate drift current density	08
	b)	How direct and indirect band gap nature of semiconductor material affects performance of solar cells.	07
Q.3	a)	What are different types of losses in solar cell? How electrical Ion mechanism is different from optical Ion mechanism.	08
	b)	Does solar cell efficiency depends on spectral contents of Sun's spectrum? How?	07
Q.4	a)	Draw & explain solar cell characteristic.	07
	b)	Describe qualitative analysis of PN junction diode under forward & reverse bias condition with IV relationship.	08
Q.5	a)	How series & shunt resistance of cell affect FF? What should ideally be valves of series & shunt resistance of cells.	05
	b)	Describe generation of carrier in solar cell.	05

Section B

Q.6	a)	Explain water dicing process in detail.	07
	b)	Explain production of MGS & EGS	08
Q.7	a)	Describe steps in producing Si wafers in detail.	08
	b)	Describe various valves of purification & usage of Si	07
Q.8	a)	Explain Si ingot pulling process by CZ process.	08
	b)	Explain saw damage removal and surface texturing.	07
Q.9	a)	Explain buried contact and point rear contact cell.	08
	b)	Draw and explain cell structure of CIGS solar cell.	07
Q.10	a)	Explain ion assisted deposition	05
	b)	Explain substrate and superstrate configuration	05

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SUBJECT CODE NO:- P-333
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E. (E&C) Examination May/June 2017
Elective-II: Analog Integrated Circuit Design
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
i) Question No.1 & 6 are compulsory.
ii) Solve any two questions from Q. No. 2 to Q.No.5
iii) Solve any two questions from Q.No.7 to Q. No. 10
iv) Figures to the right indicate full marks.
v) Assume suitable data, if necessary state clearly.

Section A

Q.1 Write short notes (any two) 10
1. AC Simulation
2. Harmonic Balance simulation
3. Transient simulation.

Q.2 a) Draw energy band diagram of silicon semiconductor. Explain valence band, Conduction band & energy band gap. 08
b) What is the role of PN junction in semiconductor technology? 07

Q.3 a) Compare Abrupt Junction to Graded junction. 07
b) Write a short note on small signal model of a MOSFET. 08

Q.4 a) Show that a diode connected transistor always operates in saturation region for any non-zero current through it. 07
b) Draw a simple PMOS current Mirror. Derive its output resistance. 08

Q.5 a) Draw the circuit of common source amplifies. Derive voltage Gain of Common source Amplifier. 08
b) What is simplified gain of common gate amplifier? Draw circuit diagram of common gate amplifier? 07

Section B

Q.6 Write short notes (any two) 10
a) Gain of a power amplifier.
b) Efficiency of a power Amplifier.
c) Return Loss of a power Amplifier.

Q.7 a) Draw circuit diagram of an Op-Amp with Lead compensation. 07
b) Explain Unity Gain Bandwidth & Phase margin of an Op-Amp 08

Q.8 a) Draw the diagram of PTAT current reference and explain its operation. 08
b) Draw the characteristics of a trans linear cell. 07

Q.9 a) List and explain the characteristics of a power amplifier. 08
b) What is Gain compression? Draw compression characteristics of a class A amplifier. 07

Q.10 a) Write a short note on characteristics of an OP-Amp. 08
b) Explain the methods to improve unity Gain Bandwidth of an Op-amp. 07

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Total No. of Printed Pages:1

SUBJECT CODE NO:- P-333-A
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E. (CSE/IT/ECT) Examination May/June 2017
Elective-II: Instructional Technology for E-Learning
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Question No.1 & 6 are compulsory.
ii)Attempt any two question from the remaining question of each section

Section A

Q.1	Solve any one		10
	a)	Explain Bloom's learning taxonomy in detail	
	b)	What are the four levels of training evaluation?	
Q.2	a)	List and explain tasks involved in analysis phase	08
	b)	List and explain types of content	07
Q.3	a)	Explain the models of blended learning	08
	b)	Describe evaluation strategy used for eLearning course	07
Q.4	a)	List and explain technical requirements for eLearning development	08
	b)	What are the methods for content identification and analysis	07
Q.5	a)	Explain how to organize and sequence the contents of an eLearning course?	08
	b)	Discuss in detail the roles of design & development team	07

Section-B

Q.6	Solve any one		10
	a)	What is the purpose of evaluation? What can be evaluated?	
	b)	Explain components of an online course	
Q.7	a)	What is story board? Explain elements of storyboard with example	08
	b)	What are the categories of authoring tool? Explain any two in detail	07
Q.8	a)	What is the difference among programming tools and authoring tools for eLearning	08
	b)	Write a note on integrating media elements	07
Q.9	a)	Using what factors authoring tools are evaluated? discuss in detail	08
	b)	Explain the role of subject matter expert	07
Q.10	a)	Write note on authoring tool capabilities	08
	b)	Explain with example demonstration practice method of content presentation.	07

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Total No. of Printed Pages:2

SUBJECT CODE NO:- P-379
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E. (ECT/E&C/EC) Examination May/June 2017
Satellite Communication [Elective-II] (EC/ECT/E&C/IE)
(Revised)

[Time:ThreeHours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B I) Q.No.1 and Q.No.6 are compulsory.
ii) Solve any two question from Q.NO.2.3.4 and 5 in section A and solve any two questions from Q.no.7, 8, 9 and 10 in section B.

Section A

Q.1 Answer the following question (any five) 10
a) What is apogee and perigee
b) Draw the block diagram of general structure of a satellite communication system.
c) What is sidereal time?
d) What is rain attenuation?
e) What is EIRP?
f) In a certain satellite communication link the carrier to noise ratio for uplink $(c/N)_u$ is 40 db whereas the carrier to noise ratio for the downlink $(C/N)_D$is 20 db .
Find the carrier to noise (c/n)ratio for the total link .
g) What is SDMA?

Q.2 A) Write a brief history on satellite communication. 08
State the importance of 6/4 GHz system.
B) A satellite is orbiting in a geosynchronous orbit of radius 41500 km. Find the velocity and time of orbit what will be the change in velocity if the radius reduces to 36000km.if g_0 =398600.5 km^3/s^2 07

Q.3 a) Explain in brief the concept of noise temperature. 08
If the rain absorption is 0.5 db over 0.1 % of the time over a year.
Find the rain absorption temperature.
b) Explain the ionospheric effects and other propogation impairment for satellite communication systems. 07

Q.4 a) Explain preassigned TDMA and demand –assigned TDMA. 08
b) What is SPADE system? Draw and explain the diagrammatic representation of a spade communication system. 07

Q.5 Write a note on 15
a) Launching of geostationary satellite
b) Link power budget.
c) PN system.

Section B

Q.6 Answer any two questions from the following , 10
a) What is station keeping? Explain.
b) What is space qualification? Explain.
c) What is weather forecasting satellites?

Q.7 a) With the help of a block diagram explain telemetry, tracking and command [TT& C] sub system of a satellite. 08

b) What is satellite stabilization? Write on a comparative study between spin stabilization and three axes body stabilization. 07

Q.8 a) Draw and explain the block diagram of home terminal DBS-TV receiving system. 08

b) Write down the basic differences between a small earth station and large earth station . 07

Q.9 a) What is VSAT system? 08
How does a VSAT work?
Who uses a VSAT system?

b) Explain in detail about 07
INMARSAT mobile satellite communication system?

Q.10 Write note on 15

a) GSM and GPS
b) Earth station antennas
c) Scientific satellites