B.Tech Sem-II C.S.B.S winter. 2019

B.Tech. (CSBS) (CBCS - 2018 COURSE) Sem - II: WINTER- 2019
SUBJECT: PRINCIPLES OF ELECTRONICS

Friday 08/11/2019
10:00 AM 01:00 PM

W-2019-3588
Max. Marks: 60

N.B

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Use of non-programmable **CALCULATOR** is allowed.
4) Assume suitable data if necessary.

Q.1	**a)**	Draw and describe N-type extrinsic semiconductor with atomic structure of silicon material	**(06)**
	b)	Draw the energy band diagram for conductor, semiconductor and Insulator and comment on forbidden energy gap.	**(04)**
		OR	
	a)	Discuss drift current and diffusion current.	**(06)**
	b)	Differentiate between Intrinsic semiconductors and extrinsic semiconductors.	**(04)**
Q.2	**a)**	Describe the effect of forward and reverse biasing on the width of the depletion region.	**(06)**
	b)	Draw the V-I characters graph for ideal and practical diode.	**(04)**
		OR	
	a)	Draw the circuit diagram of full wave rectifier with center circuit tap transformer and explain its operation with the help of waveforms.	**(06)**
	b)	Describe ripple factor and efficiency of full wave center-tap rectifier circuit.	**(04)**
Q.3		Define the current amplification factor for common base, common emitter and common collector configuration. Define the relation between them.	**(10)**
		OR	
	a)	Describe the thermal runway process with diagram.	**(06)**
	b)	Describe requirements of biasing circuits.	**(04)**
Q.4		Draw and explain the operation of n-channel JFET with graph.	**(10)**
		OR	
	a)	Compare D-MOSFET and E-MOSFET	**(04)**
	b)	Draw and explain basic structure of any one type of MOSFET.	**(06)**
Q.5	**a)**	Draw and explain the block diagrams for current series feedback and current shunt feedback network.	**(06)**
	b)	State the advantages of negative feedback in amplifier.	**(04)**
		OR	
	a)	Draw the circuit diagram for Inverting and Non- inverting amplifier and comment on gain.	**(06)**
	b)	What is the function of voltage follower circuit?	**(04)**
Q.6	**a)**	State and prove Demorgan's theorems with the help of truth table and logic diagram.	**(06)**
	b)	Draw the logic diagram and truth table of half subtractor and half adder.	**(04)**
		OR	
	a)	Draw the logic diagram of serial-in-serial-out shift register and explain its operation with the help of waveforms	**(06)**
	b)	Reduce the expression using K-map $F(A,B,C,D)=\sum m(2,3,6,7,8,10,11,13,14)$	**(04)**

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B.Tech. sem-II C.S.B.S winter. 2019

B.Tech. (CSBS) (CBCS - 2018 COURSE) Sem - II: WINTER- 2019
SUBJECT: BUSINESS COMMUNICATION & VALUE SCIENCE-II

Saturday 09/11/2019
10:00 AM 01:00 PM

W-2019-3589
Max. Marks: 60

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Assume suitable data if necessary.

Q.1 Do as directed: **[05]**

i) Ram said that he _____ to Kolkata.
a) has been **c)** have been
b) had been **d)** would have to

ii) Change into Indirect speech
Mahon said, "Please give me two colored pencils".

iii) Choose the correct preposition
My friend has been living there _____ 1970.
a) till **b)** for **c)** since **d)** then

iv) Make the correct complex sentence joining the following sentences:
My friend is a teacher. My friend stays in Mumbai.

v) Use the correct verb:
Oh, that I _____ young again!
a) am **b)** was **c)** were **d)** will be

Q.2 Fill in the blank using suitable modal auxiliaries: **[03]**

Person who __(a)___ remain an outdoor shootings __(b)___ be given a chance to go abroad. But they ____(c)___ have their passports ready. They ___(d)__ get a free ticket for one of their family members, if only their passport ____(e)___ be arranged. The company would provide them spare dollars, so the members ___(f)___ take more foreign exchange with them. If they do so they will ___(g)____ declare them at the checking counter. They ___(h)___ get in to unnecessary trouble this way.

Q.3 Answer the following questions: **[18]**

a) Adaptation of ethical principles is a solution for clash of interest: Explain.

b) Which are the points a professional must keep in mind while proceeding with the email writing?

c) Which are three major characteristics of a paragraph writing? Discuss how to develop ideas in framing a good paragraph structure?

d) Explain the fundamentals of effective public speaking.

e) Being a professional, which are the etiquettes that will make you a remarkable person in your work place?

f) How can ethics make corporate governance more meaningful?

P.T.O.

Q.4 Answer the following questions: [24]

a) There is a fall in values in today's life. Keeping this clue in mind, write a paragraph on 'The Need for Moral education in Colleges' so as to make the youth of today aware of high moral standards.

b) As a student representative of your college, write an email to the principal of Professional Engineering College, Prof. Sanjib Chatterjee, inviting his institute to participate in the technical symposium being organized in your college. Sign the email as Arun. Use proper format of an email.
Invite ---- technical symposium --- previous ---success --- expecting --- huge participation --- latest technology ---- status --- demos --- interaction --- topics – complete --- exchange ideas --- exciting prizes.

c) What are the most important values you demonstrate as a leader while in the NGO formation? How do you motivate your team?

d) What challenges do you think you will face in your work place with a diverse population? What appropriate steps will you take for the proper inclusion that will benefit your work?

e) Do you follow any specific process or steps while solving a problem? Discuss these steps in detail.

f) What is an NGO? What role does it play in the development of civil society?

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