Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY
Winter Examination-2015

Subject Name : Basic Electronics Engineering

Subject Code : 2TE02BEE1 **Branch :Diploma(All)**

Semester : 2 Date :23/11/2015 Time :10:30 To 1:30 Marks :-70

Instructions:

(1) Use of Programmable calculator & any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

Q-1 **Attempt the following questions:** **(14)**

a) Which is the correct formula for beta(β) of transistor ?
(a) I_C/I_E (b) I_E/I_B (c) I_C/I_B (d) I_B/I_C

b) How many electrons are there in an outer orbit of pentavalent element?
(a) 3 (b) 4 (c) 5 (d) None

c) Which are the minority carriers in 'P type' semiconductor?
(a) Electrons (b) Holes (c) Both (d) None

d) What is the knee voltage of Germanium diode?
(a) 0.5V (b) 0.3V (c) 0.7V (d) 0.1V

e) Which electronic component is required for rectifier circuit?
(a) Transistor (b) Zener Diode (c) Diode (d) IC

f) Which is the true equation for transistor currents?
(a) $I_C=I_B+I_E$ (b) $I_E=I_C+I_B$ (c) $I_B=I_C+I_E$ (d) None

g) Which is the full form of PIV with respect to diode?
(a) Positive Inverse Voltage (b) Peak Inverse Voltage(c) Peak Integer voltage (d) Peak Inverse Value

h) Which is not true for PN-junction diode?
(a) used in rectifier circuit (b) used in clamper circuit(c) used in clipper circuit (d) used in an amplifier circuit

i) Which is the binder material for carbon composition resistor?
(a) Silica (b) Carbon (c) Resin (d) None

j) What is the value of resistor having color code Red-Red-Orange-Gold?
(a) 22k (b) 220 (c) 2.2k (d) 220k

k) What is the tolerance of resistor having color code Brown -Black - Blue –Silver?
(a) +/-5% (b) +/-10% (c) +/-20% (d) +/-1%

l) The varactor diode can be used as
(a) Fixed resistor. (b) Variable resistor. (c) Variable capacitor.(d) None.

m) Which component is used as Light sensor device.
(a) VDR (b) Relay (c) Transformer (d) LDR

n) Which type of material is used in the capacitor?
(a) Only Conductor (b) Only Insulator (c) Semiconductor(d) None

Attempt any four questions from Q-2 to Q-8

Q-2		**Attempt all questions**	
	(a)	Explain working of P-N Junction diode.	**(5)**
	(b)	Explain V-I characteristics of P-N junction diode.	**(5)**
	(c)	Draw the circuit diagram of half wave rectifier.	**(4)**
Q-3		**Attempt all questions**	
	(a)	Write short note on Varactor Diode.	**(5)**
	(b)	Explain V_I characteristics of Zener diode.	**(5)**
	(c)	Draw the circuit diagram of Full wave rectifier.	**(4)**
Q-4		**Attempt all questions**	
	(a)	Explain working of NPN transistor.	**(5)**
	(b)	Explain working of transistor as switch.	**(5)**
	(c)	Draw circuit diagram of CE amplifier.	**(4)**
Q-5		**Attempt all questions**	
	(a)	Explain the formation of 'P type' and 'N type' semiconductor.	**(7)**
	(b)	Explain the classification of resistors.	**(7)**
Q-6		**Attempt all questions**	
	(a)	Explain bridge rectifier circuit with necessary waveforms.	**(7)**
	(b)	Explain diode positive clipper circuit with necessary waveforms.	**(7)**
Q-7		**Attempt all questions**	
	(a)	Explain the construction and working of electromagnetic relay.	**(7)**
	(b)	Describe different types of switches used in electronics engineering.	**(7)**
Q-8		**Attempt all questions**	
	(a)	Explain the construction of an electrolytic capacitor.	**(5)**
	(b)	Explain 4-band color code system for resistor.	**(5)**
	(c)	Define Conductor, Insulator,semiconductor and super conductor.	**(4)**

Q-1 **(14)**

(a) 

(a) IC/IE (b) IE/IB (c) IC/IB (d) IB/IC

(b) 

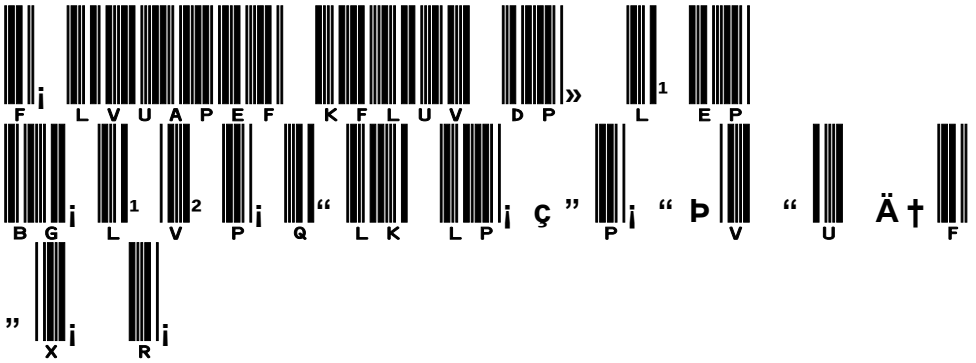
(a) 3 (b) 4 (c) 5 (d)

(c) 

(a)  (b)  (c) 

(d) 

(a) 0.5V (b) 0.3V (c) 0.7V (d) 0.1V

(e) 

(a) Transistor (b) Zener Diode (c) Diode (d) IC

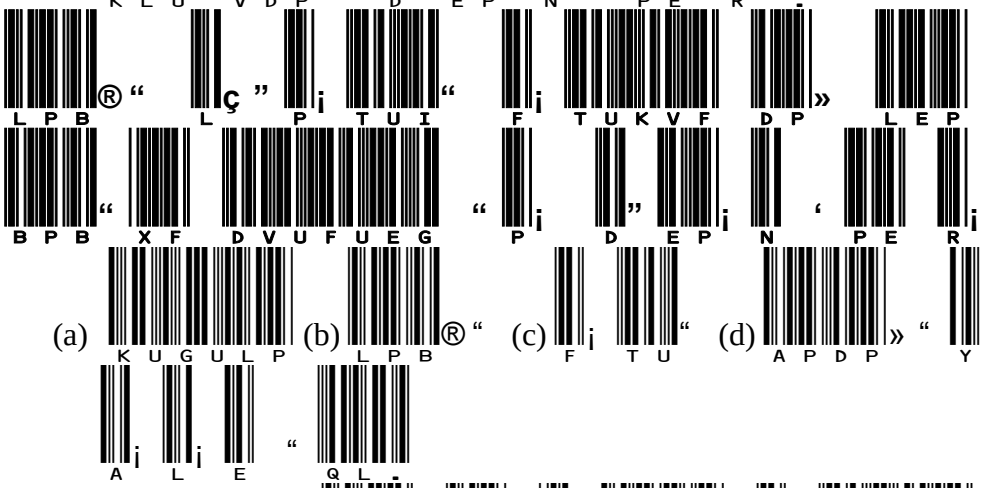
(f) 

(a) $I_C=I_B+I_E$ (b) $I_E=I_C+I_B$ (c) $I_B=I_C+I_E$ (d) 

(g) 

(a) Positive Inverse Voltage (b) Peak Inverse Voltage(c) Peak Integer voltage (d) Peak Inverse Value

(h) 

(i) 

(a) (b) (c) (d)

(j) Red-Red-Orange-Gold 

(a) 22k (b) 220 (c) 2.2k (d) 220k

(k) Brown -Black - Blue –Silver 

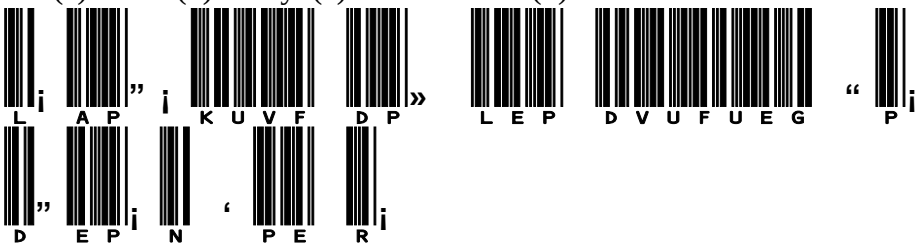
(a) +/-5% (b) +/-10% (c) +/-20% (d) +/-1%

(l) 

(a) Fixed resistor. (b) Variable resistor. (c) Variable capacitor.(d)

(m) 

(a) VDR (b) Relay (c) Transformer (d) LDR

(n) 

(a) Only Conductor (b) Only Insulator (c) Semiconductor(d)

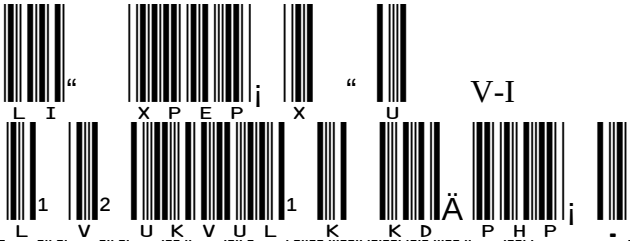
Q-2 

Q-2 

(a) (5)

P-N Ä » 

(b) (5)

P-N Ä » 

(c) (4)

Q-3

(a) (5)

(b) (5)

(c) (4)

Q-4

(a) (5)

(b) (5)

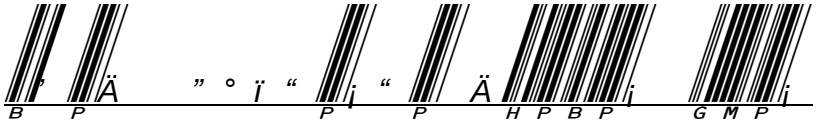
(c) (4)

Q-5

(a) (7)

(b)  (7)

Q-6



(a)  (7)

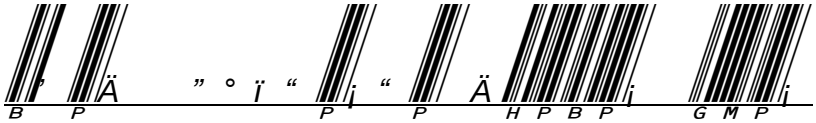
(b)  (7)

Q-7

(a)  (7)

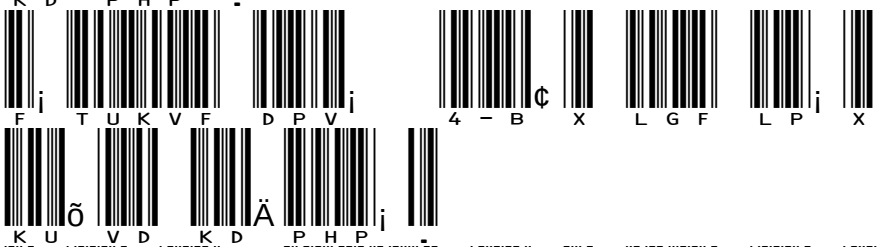
(b)  (7)

Q-8



(a) (5)

(b) (5)



(c) (4)