

S.S.M.S
S.B.B Alias Appasaheb Jedhe Art's, Commerce & Science College
B.Sc Computer Science Department

F.Y.B.Sc (Computer Science) Internal Examination, Feb-2017
ELC- 101: Principles Of Analog Electronics (P-I)

Time : 1 Hour

Marks : 20

Instructions: a) All Questions are compulsory.
b) Figures to the right indicate full marks.
c) Neat diagrams must be drawn wherever necessary.

Q.1 Answer the following questions in one or two sentences (Any 10) (1 × 10 = 10)

1) Find the value of resistor having color code

- a) Brown Black Yellow Gold b) Red Blue Orange Gray Silver

2) State laws (Any 2)

- a) Ohm's Law b) KCL c) KVL d) Superposition e) Thevenin's
f) Norton's g) Maximum power transfer h) RC time constant.

3) Define the terms of Diode. (Any 2)

- a) Knee Voltage / Threshold Voltage b) Barrier potential c) Clipper d) Clamper

4) Define the terms of BJT. (Any 4)

- a) α dc b) β dc c) DC Load line d) Q point e) Bandwidth

5) Why biasing circuit is required in the transistor circuit ? & gives method or types of Biases.

6) Which method or type of biasing is most used in transistor circuit? And why?

7) Define Intrinsic stand of ratio of UJT and find intrinsic stand of ratio for $R_{B1} = 6 \text{ K } \Omega$ and $R_{B2} = 4 \text{ K } \Omega$.

8) Define the following terms of FET. (Any 2)

- a) Transconductance b) Amplification factor c) AC drain resistance d) DC drain resistance
e) Pinch-off Voltage

9) Define the following terms Op-AMP. (Any 2)

- a) CMRR b) PSRR c) Slew rate d) Input Bias current e) Feedback

10) State parameters or characteristic of ideal and practical values of Op-AMP.

11) Give the output voltage expression for Op-AMP configurations. (Any 4)

- a) Voltage follower b) Comparator c) Inverting amplifier d) Non-inverting Amplifier
e) Adder f) Subtractor

12) State and define parameters of Sinusoidal wave form or AC signal.

13) Define the turns ratio of transformer and find V_S for $N_S = 20$, $N_P = 100$ and $V_P = 220$ V.

14) Find the value of Transconductance for $\Delta I_D = 5$ mA and $\Delta V_{GS} = 1$ V.

15) Find the value of α_{dc} , β_{dc} and I_E for $I_C = 10$ mA and $I_B = 100$ μ A.

Q.2 Draw the symbols of the following components (Any 20)

($1/2 \times 20 = 10$)

Sr No.	Components	Sr. No.	Components
1	Fuse	21	Photo Diode
2	Switch	22	Light Emitting Diode
3	Battery	23	Varactor Diode
4	Relay	24	NPN Transistor
5	Fixed Resistor	25	PNP Transistor
6	Variable Resistor	26	Unijunction Transistor
7	Fixed Capacitor	27	P-channel JFET
8	Variable Capacitor	28	N-channel JFET
9	Air Core Inductor	29	P-channel DMOSFET
10	Iron Core Inductor	30	N-channel DMOSFET
11	Ferrite Core Inductor	31	P-channel EMOSFET
12	Step up Transformer	32	N-channel EMOSFET
13	Step Down Transformer	33	Operational Amplifier
14	Isolation Transformer	34	Op-Amp As Comparator
15	Ideal Constant Voltage Source	35	Op-Amp As Buffer / Voltage Follower
16	Ideal Constant Current Source	36	Op-Amp As Inverting Amplifier
17	Thevenin's Equivalent Circuit	37	Op-Amp As Non-Inverting Amplifier
18	Norton's Equivalent Circuit	38	Op-Amp As Adder
19	Rectifier Diode	39	Op-Amp As Subtractor
20	Zener Diode		