V.P. & R.P.T.P SCIENCE COLLEGE
First Internal Test
US05CELE-01

Date: 29/9/18
10:00 a.m. to 12:00 Noon
Total Marks 50

Q1: Multiple choice questions: **8 marks**

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(1) Open loop gain of an amplifier is given by
- (i) A
- (ii) Aβ
- (iii) β
- (iv) None of the above

(2) Negative feedback in an amplifier improves
- (i) signal to noise ratio at the output
- (ii) Reduces the noise
- (iii) Both (a) and (b)
- (iv) None of the above

(3) The operational amplifier has---------- output resistance and ----------input resistance.
- (i) High, Low
- (ii) High, High
- (iii) Low, High
- (iv) Low, Low

(4) In Phase shift oscillator one RC network gives phase shift of
- (i) 30°
- (ii) 90°
- (iii) 60°
- (iv) 15°

(5) For Class A amplifier current in output flows for
- (i) one half of input cycle.
- (ii) more than one-half of input cycle.
- (iii) whole input cycle.
- (iv) Quarter of the input cycle.

(6) Distortion introduced by non-linearity of dynamic transfer characteristic can be eliminated by
- (i) Audio amplifier
- (ii) Pushpull amplifier
- (iii) Radio amplifier
- (iv) None of above

(7) In switching regulator the power transistor is used as
- (i) high frequency ON/OFF switch
- (ii) Low frequency ON/OFF switch
- (iii) medium frequency ON/OFF switch
- (iv) None of the above

(8) 78XX is a ---------- regulator IC
- (i) positive voltage
- (ii) negative voltage
- (iii) neutral voltage

(iv) None of above

Q2 : Answer in short: (Any five) **10 marks**

1. What are the four possible topologies of feedback amplifier?
2. State two differences between positive and negative feedback.
3. Sketch the circuit of Phase shift oscillator using BJT.
4. State two differences Hartley oscillator and Colpitt's oscillator.
5. What is advantage of Class A Pushpull amplifier?
6. Define Class A, Class B amplifiers.
7. Draw block diagram of regulated power supply.
8. Draw functional block diagram of IC 723.

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Q3 : Explain the general characteristic of negative feedback. **8 marks**

OR

Q3 : Classify and explain briefly the amplifier as Voltage amplifier, Current amplifier, Transconductance amplifier and Transresistance amplifier. Draw appropriate circuit diagram for each. **8 marks**

Q4 : Draw the circuit diagram of phase shift oscillator and explain in detail? **8 marks**

OR

Q4 : Draw circuit diagram of crystal oscillator and explain it in detail. **8 marks**

Q5 : For transformer coupled audio amplifier obtain expression for **8 marks**

(i) Maximum power output

(ii) Impedance matching

OR

Q5 : Describe in detail Class A Pushpull amplifier. **8 marks**

Q6 : Describe characteristics (parameters) of a regulator IC. **8 marks**

OR

Q6 : Explain two applications of IC-723. **8 marks**

********** Best of Luck**********