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181031/171031/121031

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**Eltx, Mecatronics , Med. Eltx, Power Eltx, Elect.  
& Eltx. Engg**

**Subject:- Electronic Devices & Circuits / Analog Eltx.II**

Time : 3Hrs.

M.M. : 100

**SECTION-A**

**Note:** Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 Transformer coupled amplifiers are used for amplification of \_\_\_\_\_

- a) RF signal
- b) audio signal
- c) microwave signal
- d) None of the above

Q.2 If power gain is 100, then in decibel, it is

- a) 20dB
- b) 10dB
- c) 40dB
- d) None of the above

Q.3 The operating point of amplifier may shift due to \_\_\_\_\_

- a) temperature variation
- b) replacement of transistor
- c) humidity variation
- d) All of the above

Q.4 The collector efficiency of amplifier is maximum for

- \_\_\_\_\_
- a) Class A
- b) Class B
- c) Class C
- d) Class AB

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Q.5 The effects of negative feedback are following except \_\_\_\_\_

- a) reduction in gain
- b) reduction in output resistance
- c) increase in distortion
- d) increase in bandwidth

Q.6 The material with the piezo-electric effect is \_\_\_\_\_

- a) Quartz
- b) Tourmaline
- c) Rochelle salt
- d) All of the above

Q.7 When RC circuit is used as differentiator, the output is taken across \_\_\_\_\_

- a) Capacitor
- b) resistor
- c) source voltage
- d) None of the above

Q.8 The monostable multivibrator has \_\_\_\_\_ stable state.

- a) one
- b) two
- c) no
- d) None of the above

Q.9 555 timer consists of \_\_\_\_\_

- a) comparator
- b) RS Flip flop
- c) transistor and resistor
- d) All of the above

Q.10 For an ideal operational amplifier, value of CMRR is \_\_\_\_\_

- a) zero
- b) infinity
- c) moderate
- d) none of the above

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## **SECTION-B**

**Note:** Objective type questions. All questions are compulsory.  $(10 \times 1 = 10)$

- Q.11 What do you mean by power amplifier?
- Q.12 What is the power dissipation capability?
- Q.13 What is positive feedback?
- Q.14 Define the term tuned amplifier.
- Q.15 What is high pass filter?
- Q.16 What is the resonant frequency of Wein's bridge oscillator?
- Q.17 What do you mean by comparator circuit?
- Q.18 What is the width of output pulse in 555 timer monostable multivibrator?
- Q.19 Define the term Slew rate.
- Q.20 What do you mean by SMPS?

## **SECTION-C**

**Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions.  $(12 \times 5 = 60)$

- Q.21 What are the advantages of multi stage amplifier?
- Q.22 Explain the working of class A power amplifier.
- Q.23 Give classification of power amplifier on the basis of selection of operating point.
- Q.24 What are the advantages of negative feedback?
- Q.25 Why heat sink is used in power amplifier.
- Q.26 What are the features of emitter follower circuit?

- Q.27 Give the necessary conditions for producing the undamped oscillations.
- Q.28 Explain with diagram, the working of Colpitt's oscillator.
- Q.29 Explain the necessary condition of resonance for parallel resonant circuit.
- Q.30 How does a high pass filter is constructed using RC circuit?
- Q.31 What is a clamper circuit? Give its classification.
- Q.32 What are the ideal characteristics of an op-amp?
- Q.33 What is a voltage regulator? Where it is used in electronic circuits?
- Q.34 Explain operation of op-amp as differentiator circuit.
- Q.35 Discuss the operation of astable multivibrator using 555 timer.

## **SECTION-D**

**Note:** Long answer type questions. Attempt any two questions out of three questions.  $(2 \times 10 = 20)$

- Q.36 Explain with the help of diagram, the working of integrator circuit using operational amplifier.
- Q.37 Explain the working and construction of RC phase shift oscillator.
- Q.38 Discuss the construction, working principle of two stage RC coupled amplifier. Also explain its frequency response for low frequency and high frequency.