Q.32 How 555 timer can be used as Monostable multivibrator?

Q.33 Explain op-amp as adder circuit.

Q.34 Draw and explain the pin diagram of IC 555 Timer.

Q.35 What are the disadvantages of open loop operational amplifier?

SECTION-D

Note : Long Answer type question. Attempt any two questions. (2x10=20)

Q.36 What is a multivibrator? What are its types. Explain briefly the operation of Bistable multivibrator with the help of diagram.

Q.37 Explain the working and construction of Wein Bridge Oscillator.

Q.38 Write a short note on any two:-

a) Piezoelectric crystal

b) Barkhausen criteria for oscillations

c) Q-Factor

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Roll No.....

Branch : Fire Tech. & Safety

Subject : Electronic Devices & Circuits

Time : 3 Hrs. **M.M. : 100**

SECTION-A

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

Q.1 In Class A amplifier, operating point is located at _____.

a) Centre of load line b) Near saturation

c) Cut off point d) None of the above

Q.2 The impedance of RLC series circuit at resonance is _____.

a) Resistive b) Capacitive

c) Inductive d) None of the above

Q.3 Positive feedback in an amplifier_____.

a) Increases the voltages gain

b) Decreases the voltage gain

c) Reduces noise

d) Increases the output impedance

Q.4 An oscillator always needs an amplifier with _____

a) Negative feedback b) Both types of feedback

c) Positive feedback d) An LC tank circuit

Q.5 In parallel RLC circuit, the impedance at resonance is _____.

a) Zero b) Maximum

c) Minimum d) None of the above

Q.6 When RL circuit is used as differentiator output is taken across_____.

a) Inductor b) Resistor

c) Source d) None of the above

Q.7 The bistable multivibrator has only _____ stable state.

a) No stable state b) One

c) Two d) None of the above

Q.8 The efficiency of CVT is generally_____.

a) Less than 60% b) Zero

c) More than 85% d) None of the above

Q.9 For ideal operational amplifier, which is not its characteristics_____.

a) Infinite open loop gains

b) Infinite bandwidth

c) Infinite output resistance

d) Zero output resistance

Q.10 The close loop gain of inverting amplifiers is equal to _____.

a) Open loop gain b) R_1/R_F

C) $-R_F/R_1$ d) None of the above

SECTION-B

Note : Objective type questions. All questions are compulsory. (10x1=10)

Q.11 What is power amllifier?

Q.12 Name various feedback configurations?

Q.13 What is the efficiency of class A power amplifier?

Q.14 What is the difference between amplifier and oscillator.

Q.15 What is the resonant frequency of RC phase shift oscillator?

Q.16 On which pin of 555 timer, threshold is applied?

Q.17 What is the value of impendance of RC circuit?

Q.18 Define the term linear wave shaping circuit.

Q.19 Define switches. What are different types of switches?

Q.20 Draw the block diagram of inverting operational amplifier.

SECTION-C

Note : Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 How a voltage amplifier is different from power amplifier?

Q.22 How amplifiers are divided on the basis of selection of operating point.

Q.23 What is the effect of negative feedback on output resistance?

Q.24 What is an oscillator? Name various types of oscillators.

Q.25 What are the salient features of emitter follower circuit?

Q.26 Briefly explain negative clipper diode circuit with the help of diagram.

Q.27 Draw and explain the integrator using op-amp.

Q.28 Explain the operation of UPS.

Q.29 Draw and explain the working of SMPS.

Q.30 How a transistor works as amplifier?