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**3rd Sem / Eltx, Mecatronics, Med, Eltx, Power Eltx,
Elect. & Eltx. Engg.**

**Subject:- Electronics Devices and Circuits /
Analog Eltx. - II**

Time : 3Hrs. M.M. : 100

SECTION-A

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

- Q.1 The distortion is maximum in _____ type of amplifier.
a) Push Pull b) Class A
c) Class B d) Class C
- Q.2 In Class A amplifier, operating point is located at:
a) Center of load line b) Near saturation
c) Cut off point d) None of these
- Q.3 RC coupled amplifiers are used for amplification of _____.
a) Microwave signal b) RF signal
c) Audio signal d) None of these
- Q.4 Gain of an emitter follower is
a) Unity b) 10
c) 50 d) 100

- Q.5 With negative feedback, the distortion of an amplifier _____
a) Increase b) Decrease
c) Unchanged d) None of these
- Q.6 Heat sink is mostly used in
a) Small signal amplifier
b) Large signal amplifier
c) Audio signal amplifier
d) all of these
- Q.7 In phase shift oscillator produces a phase shift of
a) 0° b) 90°
c) 180° d) 360°
- Q.8 OP-Amp amplifies
a) AC only b) DC only
c) AC and DC d) None
- Q.9 When resonance occurs in series or parallel resonant circuit, the circuit behaves as
a) Inductive b) Capacitive
c) Resistive d) None of these
- Q.10 Transistor can be used as _____ for application.
a) Amplifier b) Switch
c) Inverter d) All

(1)

181031/171031
/121031/031031

(2)

181031/171031
/121031/031031

SECTION-B

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

- Q.11 Class _____ amplifier has highest collector efficiency.
- Q.12 Define collector efficiency.
- Q.13 If three stages of multistage amplifier have individual gain of 10db, 15db 25db, then find total gain.
- Q.14 Positive feedback increase amplifier gain. (True/False)
- Q.15 At resonance in series RLC, impedance $Z = \text{_____}$.
- Q.16 What is Piezoelectric crystal effect?
- Q.17 PSRR stands for _____.
- Q.18 Negative feedback is employed in oscillator. (True/False)
- Q.19 What will be the output of IC 7812 if apply input is 24v?
- Q.20 Astable multivibrator has _____ stable state.

SECTION-C

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

- Q.21 Derive the expression of gain with negative feedback of an amplifier.
- Q.22 Explain Direct coupled Amplifier.
- Q.23 Explain the working of Emitter follower circuit.
- Q.24 Explain the working of class B power amplifier.

(3)

181031/171031
/121031/031031

- Q.25 Differentiate between voltage and power amplifier.
- Q.26 What are the essentials of an oscillator.
- Q.27 Explain IC555 an monostable multivibrator.
- Q.28 What is feedback? Write about its types and its need.
- Q.29 Explain working principle of IC voltage regulator.
- Q.30 List any five characteristics of an ideal OP-Amp.
- Q.31 Draw the circuit diagram of Hartley oscillator and explain it.
- Q.32 Explain the operation of single tuned voltage amplifier with the help of circuit diagram.
- Q.33 What are the importances of impedance matching in power amplifier?
- Q.34 Differentiate between series and parallel resonance.
- Q.35 Explain OP-Amp as integrator.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Write the effect of negative feedback on voltage gain stability, bandwidth and output impedance of an amplifier.
- Q.37 Explain the operation of astable multivibrator with the help of transistor circuit diagram. Also write the applications of multivibrators.
- Q.38 Explain the operation of class B Push Pull amplifier circuit and write its advantages and disadvantages.

(1280)

(4)

181031/171031
/121031/031031