

- Q.23 What are wave shaping circuits ? Explain its various types.
  - Q.24 Explain the working of LC capacitor input filter.
  - Q.25 Derive the relation between  $\alpha$ ,  $\beta$  and  $\gamma$
  - Q.26 Draw and explain working of NPN transistor.
  - Q.27 What is stabilization ? Explain the need of stabilization of operating point.
  - Q.28 Write a short note on DC load line.
  - Q.29 Distinguish between FETs and BJTs.
  - Q.30 Enlist the various types of multistage amplifier?
  - Q.31 What are the features of emitter follower circuit?
  - Q.32 What are the advantages of negative feedback?
  - Q.33 How operational amplifier works as integrator?
  - Q.34 Explain the working of bistable multivibrator with a neat diagram?
  - Q.35 What are the limitations of open loop operational amplifier?

## **SECTION-D**

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

- Q.36 Explain with circuit diagram, the working principle of transformer coupled amplifier. Also explain its frequency response.

Q.37 Draw the circuit diagram of 555 timer for monostable multivibrator . Explain its working.

Q.38 Draw the circuit diagram to determine the characteristics of CE configuration. Explain input, output and transfer characteristics.

No. of Printed Pages : 4

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

## **Subject:- Analog Electronic Devices**

Time : 3Hrs.

M.M. : 100

## **SECTION-A**

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

- Q.1 The value of knee voltage for silicon diode is \_\_\_\_\_ volt.  
a) 0.7                          b) 0.3  
c) 1.1                          d) None of the above

Q.2 The maximum efficiency of half wave rectifier circuit is \_\_\_\_\_  
a) 33.33%                      b) 40.6%  
c) 50%                          d) 81.2%

Q.3 In a transistor action, the most heating occurs \_\_\_\_\_  
a) emitter junction            b) collector junction  
c) can't be said                d) both junctions

Q.4 The gain stability of an amplifier circuit can be improved by using \_\_\_\_\_  
a) Positive feedback  
b) Negative feedback  
c) Both positive & negative feedback  
d) None of the above

- Q.5 If the emitter resistance  $R_e$  in a transistor amplifier is removed, then \_\_\_\_\_  
a) the gain of amplifier decreases  
b) the gain of amplifier increases  
c) base emitter junctions become less forward bias  
d) Q-point will become unstable
- Q.6 For JFET, when  $V_{os}$  is increased beyond pinch off voltage, the drain current \_\_\_\_\_  
a) increases      b) decreases  
c) remains constant      d) reduces to zero
- Q.7 The impedance matching is perfect in \_\_\_\_\_  
a) RC coupled amplifier  
b) transformer coupled amplifier  
c) direct coupled amplifier  
d) None of the above
- Q.8 The multivibrator which does not require any trigger is \_\_\_\_\_  
a) Astable multivibrator  
b) Monostable multivibrator  
c) Bistable multivibrator  
d) None of the above
- Q.9 Ideal operational amplifier has \_\_\_\_\_  
a) Infinite input and zero output resistance  
b) infinite input and infinite output resistance  
c) zero input and zero output resistance  
d) zero input and infinite output resistance

- Q.10 When negative feedback is used in operational amplifier \_\_\_\_\_  
a) input resistance increases  
b) output resistance decreases  
c) bandwidth increases  
d) All of the above

### SECTION-B

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

- Q.11 What do you mean by rectification?  
Q.12 What is an ideal diode?  
Q.13 Give the full form of PIV.  
Q.14 What do you mean by form factor?  
Q.15 What is the biasing rule of transistor?  
Q.16 Define the term “stability factor”?  
Q.17 What is faithful amplification.?  
Q.18 What is JFET? Name its terminal.  
Q.19 In which region of characteristics, transistor operates as a switch?  
Q.20 What are the applications of op-amp?

### SECTION-C

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

- Q.21 Discuss the behavior of p-n junction under forward biasing condition.  
Q.22 Explain the working of centre tap full wave rectifier?