

# Monthly test

Q. ID: ITISKILL68278M

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Govt ITI Beguru

Question Paper

Duration: 30 Mins

Total Marks: 32

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Student Name: \_\_\_\_\_

Roll No: \_\_\_\_\_

1. What is the formula used to calculate the current gain (alpha) of common base amplifier?

- A)  $I_B / I_E$
- B)  $I_C / I_E$
- C)  $I_E / I_C$
- D)  $I_E / I_C$

2. How the maximum permissible voltage that can be applied across the collector ? Emitter junction of a transistor is indicated?

- A) VCE (max) in volts
- B) VBE (max) in volts
- C) VCC in volts
- D) VCB (max) in volts

3. How does the values of bias resistors selected for collector current in class -B amplifiers?

- A) Quiescent current over the cut-off value
- B) Q point set slightly below cut-off
- C) Quiescent current beyond the cut-off point
- D) Quiescent current at mid point

4. What is the advantage of using bias in transistor circuits?

- A) Provides positive feed back
- B) Never reach saturation
- C) Easily sets saturated
- D) Gives maximum distortion

5. Why transistors made of silicon is preferred over the germanium semiconductor material?

- A) Higher thermal stability
- B) Requires complicated bias arrangement
- C) Complex design
- D) Silicon transistor needs low cut-in-voltage

6. Which class of amplifier uses fixed bias because of its impent advantage of transistor will never go to saturation?

- A) Class - A
- B) Class - C
- C) Class - AB
- D) Class - B

7. What is the voltage gain in a transistor if the input voltage in 40mv and the output voltage in 3.6V?

- A) 90
- B) 270
- C) 45
- D) 180

8. What type of packaging is generally used to transistors utilized for low power amplification?

- A) Plastic packaging with metal heatsinks
- B) Plastic packaging
- C) Ceramic packaging
- D) Metal packaging

9. Why NPN type of transistors are preferred over the PNP type transistors?

- A) NPN has higher switching speed
- B) Low operating voltage
- C) NPN has lower switching speed
- D) NPN has good bias stability

10. What is the meaning of first letter indicated in the transistor code number BC 107?

- A) Germanium material used
- B) Indium material used
- C) Silicon material used
- D) Antimony material used

11. How can you confirm a transistor as defective?

- A) By physical testing
- B) By ohm meter testing
- C) By circuit testing
- D) By voltage measurements

12. What is the overall base emitter voltage required to turn the darlington pair?

- A) 1.4 V
- B) 0.3 V
- C) 0.2 V
- D) 0.7 V

13. In which quantity affects the Q point of a transistor amplifier?

- A) Mismatching signals
- B) Increased temperature
- C) Proper biasing methods
- D) Decreased temperature

14. How the negative feedback is called?

- A) Regenerative feedback
- B) Current controlled feedback
- C) Degenerative feedback
- D) Voltage controlled feedback

15. What is the current gain of common collector amplifier?

- A) High
- B) Medium
- C) Low
- D) Very high

16. What is the advantage of silicon over germanium for transistor fabrication?

- A) Lower thermal stability      B) Lower operating voltage  
C) Higher thermal stability      D) Higher amplification factor

17. What is the current gain of a common emitter amplifier?

- A) Less than 1                      B) Unity  
C) Infinity                            D) Greater than 1

18. Which type of transistors are required to amplify signals from the microphone /transducer?

- A) Medium power transistors      B) Low power transistors  
C) High power transistors        D) Epitaxial power transistors

19. Which configuration of transistor amplifier is most commonly used in electronic circuits?

- A) Common collector configuration      B) Common emitter configuration  
C) Common drain amplifier configuration      D) Common base configuration

20. Why is the complementary - symmetry amplifier preferred over the other types of amplifier configurations?

- A) To minimize the gain              B) To eliminate the transformer  
C) To get less distortion                D) To get more voltage gain

21. Which type of packaging is used for transistors utilized for medium power amplification?

- A) Plastic packaging                  B) Ceramic packaging  
C) Metal packaging                      D) Plastic packaging with metal heatsinks

22. Which coding system for transistor type numbering system is followed by American standard?

- A) Home codes                          B) JIS standard  
C) PRO-ELECTRON standard      D) JEDEC standard

23. What is the maximum emitter to base voltage  $V_{EB}$  (max) for the transistor BC 147?

- A) 6V                                        B) 4V  
C) 5V                                        D) 8V

24. What is the input impedance of darlington pair transistors?

- A) Very low input impedance      B) Very high input impedance

- C) Medium input impedance      D) Unity

25. What is the name of multi-stage amplifiers?

- A) Cascoded amplifier                  B) Complementary symmetry amplifier  
C) Cascaded amplifier                  D) Darlington pair amplifier

26. What is the purpose of using positive feedback in amplifiers?

- A) To produce modulation      B) To produce multiplexion  
C) To produce demodulation      D) To produce oscillation

27. Which type of amplifier is used to operate the loud speaker?

- A) Power amplifier                      B) Voltage amplifier  
C) IF amplifier                            D) RF amplifier

28. Which parameter of passive component can be calculated using the formula  $X_L = 2\pi fL$ ?

- A) Capacitance                          B) Inductance  
C) Inductive reactance                D) Capacitive reactance

29. What is the efficiency of transformer coupled class A amplifier?

- A) About 50%                            B) Unity  
C) Less than 20%                        D) More than 60%

30. Where does the depletion region exist in a bipolar transistor?

- A) Between collector - base electrodes      B) Between emitter - base electrodes  
C) Between collector and emitter electrodes      D) Between E-B and B-C electrodes

31. What will happen when the forward bias voltage across the PN junction is increased excessively?

- A) Junction ruptured and short circuited      B) No current flows through the junction  
C) Increases the cut-in voltage                  D) Barrier width of junction increases

32. Which type of amplifier is used to operate the loud speaker?

- A) RF Amplifier                          B) Power Amplifier  
C) IF Amplifier                            D) Voltage Amplifier