

S. S.R. DEGREE COLLEGE, (AUTONOMOUS)
I-SEMESTER INTERNAL ASSESSMENT-I EXAMINATIONS
Course: M.Sc. PHYSICS (Paper –104)
Electronics - 1
QUESTION BANK

I. Multiple Choice

10. Which of the following device has the highest input impedance

A)JFET B)MOSFET C) crystal diode D) ordinary transistor

11. An SCR has __ no of pn junctions

A)2 B)3 C)4 D)1

12. A triac is equivalent to two SCR s __

A) in parallel B) in series C) in inverse parallel D)none of the above

13. in UJT, the p-type emitter is __ doped

A) tightly B) heavily C) moderately D)none of the above

14. Feedback is the process of taking a fraction of

A) Input voltage B) Output voltage C) Supply voltage D) Noise

Answer: B) Output voltage

15. Which type of feedback improves stability and reduces distortion?

A) Positive feedback B) Regenerative feedback
C) Negative feedback D) Zero feedback

Answer: C) Negative feedback

16. Gain with negative feedback is

A) Greater than open-loop gain B) Equal to open-loop gain
C) Less than open-loop gain D) Infinite

Answer: C) Less than open-loop gain

17. The feedback factor is usually denoted by

A) α B) β C) γ D) δ

Answer: B) β

18. An oscillator is an electronic circuit that produces

A) DC output B) AC output without input signal
C) Rectified output D) Amplified DC

Answer: B) AC output without input signal

19. Barkhausen criterion requires

A) Gain < 1 B) Gain > 1 C) Loop gain = 1 with zero phase shift D) Phase shift = 180°

Answer: C) Loop gain = 1 with zero phase shift

20. Which oscillator uses LC tank circuit?

A) RC oscillator B) Wien bridge oscillator C) Hartley oscillator D) Phase shift oscillator

Answer: C) Hartley oscillator

II. Fill in blanks

1. • Tunnel diode works on the principle of ____.

Ans: Quantum mechanical tunneling

2. • Tunnel diode is a ____ doped p-n junction.

Ans: Heavily

3. • A photodiode is operated in ____ bias.

Ans: Reverse

4. • The output current of a photodiode is proportional to ____.

Ans: Intensity of incident light

5. • BJT has ____ junctions and ____ terminals.

Ans: Two, three

6. • In an NPN transistor, majority charge carriers are ____.

Ans: Electrons

7. • JFET is a ____ controlled device.

Ans: Voltage

8. • In JFET, gate current is ____.

Ans: Zero (negligible)

9. • MOSFET stands for ____.

Ans: Metal Oxide Semiconductor Field Effect Transistor

10. • The gate in MOSFET is ____ insulated from the channel.

Ans: Oxide

11. • CMOS stands for ____.

Ans: Complementary Metal Oxide Semiconductor

12. • CMOS uses ____ and ____ MOSFETs.

Ans: NMOS and PMOS

13. • UJT has ____ p-n junction.

Ans: One

14. • UJT is mainly used as a ____ oscillator.

Ans: Relaxation

15. • SCR is a ____ layer, ____ junction device.

Ans: Four, three

16. • SCR has ____ terminals.

Ans: Three

17. • DIAC is a ____ terminal device.

Ans: Two

18. • DIAC conducts only after reaching ____ voltage.

Ans: Breakover

19. TRIAC is a ____ directional device.

Ans: Bidirectional

20. TRIAC is equivalent to ____ SCRs connected back-to-back.

Ans: Two

III. Descriptive questions

1. Draw the Characteristics of Tunnel Diode
2. Explain principle and working of solar cell
3. Explain the working of Photo Diode and Draw its Characteristics
4. Explain principle of SMPS
5. Explain the Construction of RC Coupled amplifier and draw its frequency response curve