ELECTRONIC DEVICES AND CIRCUITS
WORKSHEET-5: Special Purpose diodes, FET & Advanced Devices

1. JFET can be used as a _____ resistor
2. If a MOSFET is to be used in the making of an amplifier then it must work in _____
3. MOSFET can be used as _____
4. Conduction in n channel MOSFET is due to_____
5. Ratio of output current to input voltage is termed as_____
6. There are two major categories of field effect transistors_____ and _____
7. The overall operation of the JFET is based on varying the _____ of the channel to control the drain current.
8. Drain characteristics shows the relation between the drain to source voltage Vds and _____
9. To use FET as an amplifier it is operated in_____.
10. When Vds is applied and it is increasing the drain current ID also increases linearly up to knee point. This region is called as_____.
11. Zener Diode can be used to great effect to regulate or stabilize a _____ source against supply or load variations
12. When Tunnel Diode are forward-biased, an odd effect occurs called "quantum mechanical tunneling" which gives rise to a region where an increase in forward voltage is accompanied by a decrease in_____current.
13. The most important operating region for a tunnel diode is the _____ region.
14. Varactor diode is a special type of diode which uses _____ property.
15. _____terminals are there in a uni junction transistor?
16. An SCR has _____ pn junctions
17. Varactor diodes are often used in_____
18. The photo diode is a semiconductor p-n junction device whose region of operation is limited to the_____
19. A photodiode is a type of photo detector capable of converting light into either_____

20. Comparing the size of BJT and FET, choose the correct statement?
    a) BJT is larger than the FET
    b) BJT is smaller than the FET
    c) Both are of same size
    d) None of the above
21. The units of voltage gain is
    a) It has no units, it is a ratio
    b) Decibels (db)
    c) All of the mentioned
    d) None of the mentioned
22. What will be the value of rd, if two identical FETs are connected in parallel?
    a) Doubles
    b) Reduces to half
    c) 0
    d) Infinite
23. Vgsoff is the value of Vgs that reduces Id to approximately
    a) Infinity
    b) One
    c) zero
    d) None of the above.
24. Drain resistance is expressed as where Vgs is held constant
    a) rd=ΔVds/ ΔId
    b) rd= ΔId/ ΔVds
    c) rd= ΔId/ ΔVgs/
    d) None of the above
25. There are two basic types of MOSFETS Depletion type
    a) Linear
    b) Bi-linear
    c) Enhancement type
    d) Non-linear MOSFET
26. D-MOSFETS can be operated in both the depletion mode and the
    a) Enhancement mode
    b) Active Mode
    c) Passive Mode

d) Saturation Mode

27. Both MOSFETS have an insulating layer between the and the rest of the component
    a) Source
    b) Drain
    c) Gate
    d) Substrate
28. Since the gate is insulated from the rest of the component, the MOSFET is sometimes referred to as an
    a) Free Gate
    b) Junction FET
    c) Border FET
    d) insulated gate FET or IGFET.
29. In Varactor Diode, capacitance varies inversely as dielectric thickness
    a) Inversely
    b) Directly
    c) Square Inverse
    d) None of the above
30. A silicon-controlled rectifier (or semiconductor-controlled rectifier) is a solid state device that controls current.
    a) Two Layer
    b) Three Layer
    c) Four Layer
    d) Eight Layer
31. In non-conducting state, the current through the SCR is the current which is very small and is negligible.
    a) Leakage Current
    b) Dark Current
    c) White Current
    d) Zero Current
32. A UJT has _____p-n junction, unlike a BJT which has two p-n junctions
    a) Four
    b) Three

c) Two

d) One

33. The tunnel diode is mainly used

a) For very high speed of switching

b) To control the power

c) For rectification

d) For fast chopping

34. An SCR has three terminals viz ……

a) Cathode, anode, gate

b) Anode, cathode, grid

c) Anode, cathode, drain

d) None of the above

35. In Negative resistance characteristics exist for

a) Zener diode

b) PN Diode

c) Tunnel diode

d) Varactor diode

36. These diodes have a heavily doped p–n junction only some 10 nm (100 Å) wide.

a) PN Diode

b) Tunnel Diode

c) SCR

d) None of the above

37. The Zener Diode is used in its

a) reverse breakdown mode

b) Forward Mode

c) Saturation Mode

d) None of the above

38. The advantage of photodiode is that it can be used as

a) Low Frequency device

b) Microwave device

c) Radio wave device

d) variable resistance

39. The drain of FET is analogous to BJT

a) Collector

b) Emitter

c) Base

d) Drain