

Recruitment for the post of Technician 'A' (Electronics)
Full Marks 100 (Written Test: 30 Marks + Trade Test: 70 Marks)
Time Allotted: (Written Test: 1 Hour + Trade Test: 3 Hours)

Name:
Signature:

Application Number:
Date:

Group A

Answer the questions selecting Right alternative

30 X 1 = 30

1. How many junctions a Bipolar Junction Transistor has?
 - a. 1
 - b. 2
 - c. 3
2. To make a Bridge rectifier at-least how many diodes are required?
 - a. 4
 - b. 2
 - c. 6
3. Forward current in a p-n junction diode flows when not in Breakdown –
 - a. In both the directions
 - b. In one direction
 - c. None of the above
4. TRIAC can be represented
 - a. By two SCRs connected in anti-parallel combination
 - b. By two SCRs connected in parallel combination
 - c. By two SCRs connected in series combination
5. Which among the following logic gates are Universal Logic gates –
 - a. XOR and XNOR gate
 - b. NAND and NOR gate
 - c. OR and XNOR gate
6. SN74LS00 indicates –
 - a. TTL logic gate
 - b. CMOS logic gate
 - c. ECL logic gate
7. A half adder can be made using –
 - a. Only one NAND gate and one NOR gate
 - b. Only one XOR gate and one NAND gate
 - c. Only one AND gate and one XOR gate

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8. A multiplexer –
 - a. Selectively decodes multiple outputs from one input
 - b. Selectively decodes one output from many input
 - c. Selectively decodes multiple outputs from multiple input
9. Which among the following Flip-flops suffers Race around condition –
 - a. JK Flip Flop
 - b. SR Flip Flop
 - c. D Flip Flop
10. A counter is an example of –
 - a. Sequential Circuit
 - b. Combinational Circuit
 - c. None of the above
11. Which among the following parameters should be checked while purchasing Rectifier diodes?
 - a. Peak Inverse Voltage
 - b. Length of the Leads
 - c. Knee Voltage
12. Zener diodes usually work –
 - a. In Forward Bias
 - b. In Reverse Bias
 - c. When it is not biased
13. Which color bands would be present on a resistor of 33 Kilo Ohms, $\pm 5\%$ –
 - a. Red, Red, Orange, Silver
 - b. Orange, Orange, Red, Golden
 - c. Orange, Orange, Orange, Golden
14. A variable capacitor can be used to design RF stage of–
 - a. A Television
 - b. A Logic gate
 - c. A Rectifier
15. An electrolytic polar capacitor used to have–
 - a. A positive lead and a negative lead
 - b. No particular lead marked as positive or negative
 - c. Both the leads marked as positive.
16. In order to transmit audio it should be–
 - a. Demodulated
 - b. Attenuated
 - c. Modulated

17. Heat-sink is used with transistors for –
 - a. Bias Stabilization
 - b. Avoiding thermal runaway
 - c. Providing support for mounting
18. How will you combine two capacitors of $100\mu\text{F}$ to make one $50\mu\text{F}$ capacitor?
 - a. By series combination
 - b. By parallel combination
 - c. By anti-parallel combination
19. Why FM signals remain less affected by noise as compared to AM?
 - a. It needs huge power to generate FM
 - b. Bandwidth requirement is less in FM
 - c. FM doesn't have any change in Amplitude.
20. What will be the value of a capacitor marked 103 on it?
 - a. $0.1\mu\text{F}$
 - b. $0.01\mu\text{F}$
 - c. $0.001\mu\text{F}$
21. The number of bits used to store a BCD digit is:
 - a. 8
 - b. 4
 - c. 2
21. The weight of the LSB in a binary number is:
 - a. 1
 - b. 4
 - c. 2
22. Ohm's law describes the mathematical relationship between
 - a. ohms, kilo-ohms, and mega ohms
 - b. resistor size and resistor value
 - c. resistance, voltage, and current
23. 7200 mV is same as
 - a. $7.2\mu\text{V}$
 - b. 7.2V
 - c. 72V
24. The unit for frequency is
 - a. hertz
 - b. ampere
 - c. second

25. What input values will cause an AND logic gate to produce a HIGH output?
 - a. At least one input is LOW
 - b. All inputs are HIGH
 - c. All inputs are LOW
26. An astable multivibrator is a circuit that:
 - a. has two stable states
 - b. produces a continuously High output signal
 - c. has two unstable states
27. Since zener diodes are destroyed by excessive current, circuits must have:
 - a. higher voltage sources
 - b. more dopants
 - c. current limiting resistors
28. Forward bias of a silicon P-N junction will produce a barrier voltage of approximately how many volts?
 - a. 0.3
 - b. 7.0
 - c. 0.7
29. The determination of a digital signal's frequency and waveshape is best accomplished with which test equipment?
 - a. an oscilloscope
 - b. a logic probe
 - c. a frequency generator
30. What is the frequency of DC signal?
 - a. 50 Hz
 - b. 60 Hz
 - c. 00 Hz

Time: 3 Hours

Group - B

70 X 1 = 70

1. Assemble the circuit depicted below neatly on a general purpose Printed circuit board and power it up using desired supply voltage to check if it produces proper counting sequences.

