

**Higher Secondary (Vocational)**  
**CLASS XI**  
**Semester - 1**  
**Basic Electronics Theory**

**Time Allowed: 45 Mins**

**Full Marks: 20**

A. Choose the correct alternative from the following

1. The forbidden energy gap for Silicon is
  - a) 0.67 eV
  - b) 1.1 eV
  - c) 1.8 eV
  - d) 0.72 eV
2. An example for intrinsic semiconductor
  - a) Si
  - b) Al
  - c) P-type Si
  - d) N-type Si
3. If a small amount of antimony is added to germanium crystal
  - a) it becomes a p-type semiconductor
  - b) the antimony becomes an acceptor atom
  - c) there will be more free electrons than holes in the semiconductor
  - d) its resistance is increased
4. In n-type semiconductors, number of holes is \_\_\_\_\_ number of free electrons.
  - a) Equal to
  - b) Greater than
  - c) Less than
  - d) Can not define
5. In an unbiased p-n junction
  - a) The potential of the p and n sides becomes higher alternately
  - b) The p side is at higher electrical potential than the n side
  - c) The n side is at higher electrical potential than the p side
  - d) Both the p and n sides are at the same potential
6. In a P-N junction diode, the holes are due to
  - a) protons
  - b) extra electrons
  - c) neutrons
  - d) missing electrons
7. In a reverse biased diode, the conduction is mainly due to .....
  - a) electrons
  - b) holes
  - c) electrons in p-type and holes in n-type

- d) holes in p-type and electrons in n-type
8. In forward bias, the width of potential barrier in a p-n junction diode?
- a) increases
  - b) decreases
  - c) remains constant
  - d) first increases then decreases
9. Application of forward bias to the p-n junction
- a) increases the number of donors on n side
  - b) decreases electric field in depletion region
  - c) increases potential difference across the depletion region
  - d) widens the depletion zone
10. Zener diode is designed to specifically work in which region without getting damaged?
- a) Active region
  - b) Breakdown region
  - c) Forward bias
  - d) Reverse bias
11. The LED is usually made of.....
- a) GeSi
  - b) C and Si
  - c) GaAs
  - d) none of the above
12. Varactor diode is a semiconductor diode in which the \_\_\_\_\_ can be varied as a function of reverse voltage of the diode
- a) Junction resistance
  - b) Junction capacitance
  - c) Junction impedance
  - d) None of the mentioned
13. In a half wave rectifier diode conducts during.
- a) both half cycles
  - b) positive half
  - c) negative half
  - d) one half input
14. The maximum efficiency of a full-wave rectifier is...
- a) 41.2 %
  - b) 31.2 %
  - c) 91.2 %
  - d) 81.2 %
15. In full-wave rectification, if i/p frequency is 50 Hz then output frequency is.....
- a) 50 Hz
  - b) 100 Hz
  - c) 200 Hz
  - d) 400 Hz

16. Filter circuits after rectifiers
- smoothens pulsation
  - hardens pulsation
  - keeps the pulsation as it is
  - doubles the pulsations
17. Which of the following are true about capacitor filter?
- It is also called as capacitor output filter
  - It is electrolytic
  - It is connected in parallel to load
  - It helps in storing the magnetic energy
18. The cut-in point of a capacitor filter is\_\_\_\_\_
- The instant at which the conduction starts
  - The instant at which the conduction stops
  - The time after which the output is not filtered
  - The time during which the output is perfectly filtered
19. Voltage regulators require
- Only line regulation
  - Only load regulation
  - A constant load
  - Load and line regulation
20. Voltage regulators keep a constant .....output voltage when the input or load varies within limits.
- DC
  - AC
  - Ripple
  - None of the above

**ANSWER KEY**

<b>1</b>	b	<b>2</b>	a	<b>3</b>	a	<b>4</b>	b	<b>5</b>	b
<b>6</b>	d	<b>7</b>	c	<b>8</b>	b	<b>9</b>	b	<b>10</b>	b
<b>11</b>	c	<b>12</b>	b	<b>13</b>	b	<b>14</b>	d	<b>15</b>	b
<b>16</b>	a	<b>17</b>	b	<b>18</b>	a	<b>19</b>	d	<b>20</b>	a