2022 XI 26 **0230** **Seat No.** | | | | | |

Time : 1½ Hours **FIRST-TERM**

ELECTRONICS
Pre-Vocational
(Electrical Group)

Subject Code

S	1	0	4	3

Total No. of Questions : 20 **(Printed Pages : 8)** **Maximum Marks : 20**

***INSTRUCTIONS* :** (*i*) Question paper contains 20 questions of **1** mark each.

(*ii*) *All* questions are compulsory.

(*iii*) Each question has four choices A, B, C and D and only one of them is the correct answer.

(*iv*) Darken the bubble on the OMR sheet correspond to most appropriate answer.

(*v*) Use Blue or Black Ball Point Pen to darken the bubbles on OMR sheet.

(*vi*) Once darken the bubble, it is not possible to change your answer.

(*vii*) Do not fold the OMR sheet or use white ink.

(*viii*) OMR sheet will not be replaced under any circumstances.

(*ix*) No negative marks for the wrong answer.

1. The building blocks of a regulated DC power supply circuit are ..... .

(A) Rectifiers, filter

(B) DC regulator

(C) Step down transformer

(D) All of the above

2. The main purpose of using silicon steel in the lamination of the transformer core is ..... .

(A) To reduce hysteresis losses

(B) To reduce copper losses

(C) To reduce eddy current losses

(D) To reduce magnetic losses

3. The transformer that has same number of turns in the primary and secondary winding is called ..... .

(A) Power Transformer

(B) Shell type Transformer

(C) Isolation Transformer

(D) Core type Transformer

4. Any complex circuit can be replaced by a single source of emf in series with a single resistance by applying ..... .

(A) Ohm's law

(B) Thevenin theorem

(C) Superposition theorem

(D) Lenz's law

5. The element suitable for doping an intrinsic semiconductor to obtain an N-type semiconductor is ..... .

(A) Potassium

(B) Phosphorus

(C) Polonium

(D) All of the above

6. The configuration of a transistor that has high input resistance and the voltage gain is less than unity is ..... .

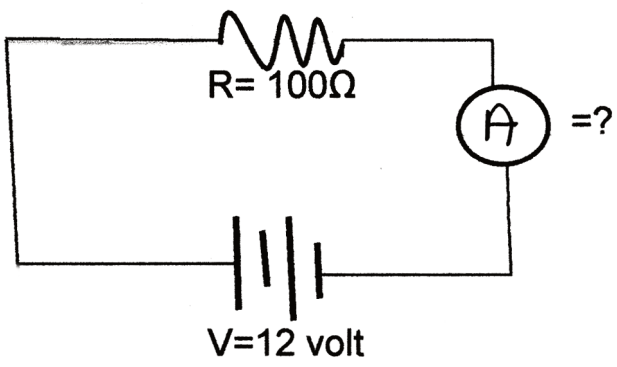
(A) Common source

(B) Common emitter

(C) Common collector

(D) Common base

7. In the following circuit, the unknown value is ..... .



(A) 120 mA

(B) 12.00 mA

(C) 1.200 mA

(D) 0.12 mA

8. The Mutual Induction between the two coils decreases when ..... .

(A) The distance between the two coils decreases

(B) When the current in the input coil increases

(C) When the number of turns in both coils is increased

(D) When the distance between the two coils is increased

9. The collector region is made physically larger than the emitter region because ..... .

(A) Collector region dissipates more power

(B) Emitter region dissipates more power

(C) Collector region dissipates less power

(D) Emitter region dissipates less power

10. The AC component presents in the output voltage of the rectifier in the power supply circuit is called ..... .

(A) Instantaneous value

(B) Ripple

(C) Amplitude

(D) Frequency

11. The disadvantege of full wave rectifier over half wave rectifier is ..... .

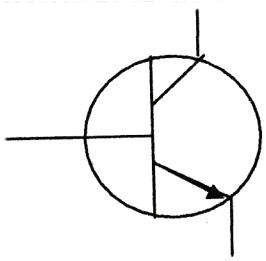
(A) Full wave rectifier requires more diodes than half wave rectifier

(B) Full wave rectifier requires more space than half wave rectifier

(C) Design of full wave rectifier is more complex than half wave rectifier

(D) All of the above

12. The following symbol is used for ..... .



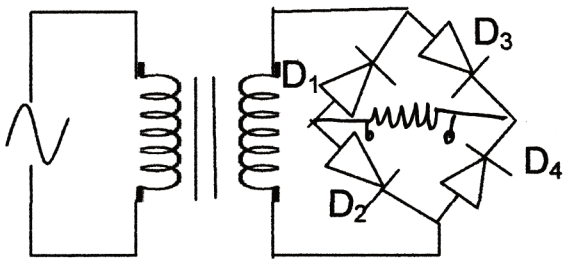
(A) PNP

(B) MOSFET

(C) FET

(D) NPN

13. From the given circuit diagram of a bridge rectifier, the diodes that conducts during the negative half cycle are ..... .



(A) D_1 and D_2

(B) D_2 and D_3

(C) D_1 and D_3

(D) D_2 and D_4

14. The value of the forbidden energy gap in an energy band structure of a semiconductor is ..... .

(A) 5 eV

(B) 2 eV

(C) 1 eV

(D) 0.1 eV

15. The rectification efficiency of full wave rectifier is double than half wave rectifier because ..... .

(A) it converts only positive cycle of AC to DC

(B) it converts only negative cycle of AC into DC

(C) it converts both positive and negative cycles of AC into DC

(D) none of the above

16. PN Junction diode allows the current to flow, when it is ..... .

(A) Reverse biased

(B) Forward biased

(C) In both forward and reverse biased

(D) None of the above

17. The heat produced in the transformer's winding is due to ..... .

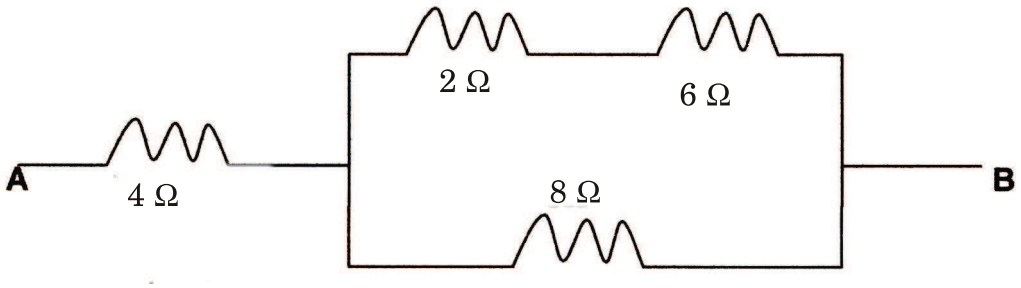
(A) Input current

(B) Input resistance

(C) Load current

(D) Load resistance

18. The total resistance derived between A and B from the below given circuit diagram is ..... .



(A) 10 Ω

(B) 8 Ω

(C) 100 Ω

(D) 20 Ω

19. Smitha Broke open an old power supply circuit and found that the transformer have three terminal in its secondary windings and only two diodes are visible. The power supply circuit most probably contains ..... .

(A) Bridge rectifier

(B) Half wave rectifier

(C) Centre tap rectifier

(D) None of the above

20. Since there are no moving parts in a transformer, it requires ..... .

(A) Extra care and maintenance

(B) Very little care and maintenance

(C) No care and maintenance

(D) All of the above

Rough Work