2019 IV 09 **0930** **Seat No.** | | | | | |

Time : 2 Hours

ELECTRONICS

Pre-Vocational (Electrical Group)

Subject Code

S	0	4	3

Total No. of Questions : 4 **(Printed Pages : 3)** **Maximum Marks : 40**

INSTRUCTIONS : (*i*) *All* questions are compulsory.

(*ii*) Draw a neat labelled diagrams wherever necessary.

(*iii*) Figures to the right indicate full marks.

(*iv*) Answer each question on a fresh page.

1. (A) Answer the following questions in *one or two* words each : 2

(*i*) What is the frequency of 230 Volts Domestic AC supply.

(*ii*) Name the microphone that has high Impedance.

(B) Answer the following questions in brief : 6

(*i*) Draw the circuit diagram of a half wave rectifier and state its disadvantages.

(*ii*) Define the following :

(*a*) Self Inductance

(*b*) Mutual Inductance

(*c*) One Henry.

(C) Answer the following question in brief : 2

What is public address system ? State one of its characteristics.

2. (A) Answer the following questions in *one* sentence each : 2

(*i*) What is a rectifier ?

(*ii*) Name the two transformers classified on the basis of its output voltage.

(B) Answer the following questions in brief : 6

(*i*) Draw a neat diagram of a simple core type transformer. State its advantage over shell type transformer.

(*ii*) State the working principle of a moving coil speaker. State the two classes of speakers based on their frequency response. What are double conned speakers ?

(C) Answer the following questions in brief : 2

Draw the symbol of loud speaker. Compare Dynamic and Electrodynamic speaker stating one point of difference.

3. (A) Answer the following in *one* or *two* words : 2

(*i*) How does a longitudinal wave travel ?

(*ii*) Name the part of the speaker that vibrates to produce sound.

(B) Answer the following questions in brief : 4

(*i*) State the two characteristics of a longitudinal wave.

(*ii*) What is meant by velocity of a sound wave ? What is the amplitude of a sound wave ?

(C) Answer any *one* of the following in brief : 4

(*i*) With the help of a neat diagram explain the construction of a crystal microphone.

(*ii*) With the help of a neat diagram explain the construction of a Ribbon Microphone.

4. (A) Answer the following questions in short : 2

(*i*) What is doping of a semiconductor ?

(*ii*) Define Kirchhoff's current law.

(B) Answer the following in brief : 4

(*i*) An electric heater taken 3 Amps of current when connected to a 230 V AC Supply. Find the power consumed by the heater if the supply frequency is 50 Hz.

(*ii*) What is forward biasing of a PN junction ? What is the state of depletion region in a forward biased connection ?

(C) Answer any *one* of the following in detail : 4

(*i*) With a neat diagram explain the common collector configuration of a NPN type transistor.

(*ii*) With a neat diagram explain the common emitter configuration of a NPN type transistor.