PC – 261 CV-19

(522) M.Sc. PHYSICS (SECOND SEMESTER)

Term End Examination JUNE 2020

Compulsory/Optional Group Paper - IV ELECTRONICS (II)

Time : Three Hours] [Maximum Marks : 080 [Minimum Pass Marks :0

नोटः– दोनो खण्डों से निर्देशानुसार उत्तर दीजिए। प्रश्नों के अंक उनके दाहिनी ओर अंकित हैं। Note: Answer From Both the Section as Directed. The Figures in the right-hand margin indicate marks.

SECTION - A

1. Answer the following questions:- 1X10

(a) Give the Symbol of LDR.
(b) Which material is used for infrared radiation in LED.
(c) What is the main function of Solar Cell.
(d) How one can Convert photo transistor into a photo diode.
(e) What is input resistance of an ideal op-Amp.
(f) Give the ciruit Symbol of non inverting op-amp.
(g) What do you mean by electro luminescent process.
(h) What is the value of offset voltage and current in an ideal opamp?
(i) What do you mean by Slew rate?
(j) Which type of frequency Signal is used in wein bridge oscillator?

2. Answer the following questions (Short Answer type Question) 1X10

(a) Differentiate between Radiative and non radiative transitions.

OR

Explain the condition for population inversion in active region.

(b) What is Solar cell? Write its ideal Conversion effeciency.

OR

Discuss about Photo conductor and its equivalent circuit.

(c) Discus about -CMRR.

OR

Write any two difference between inverting and non inverting op-amp.

(d) What is Practical op amp? Give expression for PSRR.

OR

Explain the Principle of oscillator.

(e) Explain working of Differential amplifier.

OR

What is Multivibrator Write its application.

SECTION - B

Answer the following questions (long Answer type questions) 15X4=60

3. What is photo condictive device? Explain constuction and working of LDR. Write its two advantage and disadvantages.

OR

Explain Various characterices curve of LED and Discuss about choice of LED materials.

4. Describe Energy band diagram of Solar cell and explain its V-I Characteristic curves.

OR

What do you mean by photo detectors? explain the construction and working of Photo transistor.

5. Give block diagram of typical op-amp. find expression for its amplification factor with feed back hence describe negetive feed back.

OR

Explain Dual input balane output differential amplifier. Discuss about DC and AC analysis.

6. Explain with suitable circuit diagram about Summing, scaling and averaging amplifier.

OR

Discuss the principle of oscillator. Explain working of wein bridge oscillator with suitable circuit diagram.

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