

Code No. : B03/401

Or

Explain Magnetron in the following form :

- (i) Construction and diagram,
- (ii) Basic principle,
- (iii) Uses.

**Unit-IV**

- 4. (A) What are earth station geometry ? 2
- (B) What are Radar antennas ? 2
- (C) Explain Geo-stationary and Geo-synchronous orbit. 4

Or

Explain function of Radar receivers.

- (D) Discuss function of communication satellite. Explain earth station geometry in detail. Draw appropriate diagram. 12

Or

Explain principle of RADAR, characteristics of Radar system and Radar transmitting system in detail.



Roll No. ....

Total No. of Sections : 4

Total No. of Printed Pages : 4

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**III Semester Examination**

**M.Sc.**

**PHYSICS**

**Paper IV**

[Special Paper II-Electronics]

Time : Three Hours ]

[ Maximum Marks : 80

[Min. Passing Marks : 16

*Note : Part A and B of each question in each unit consists of Very Short Answer Type Questions which are to be answered in one or two sentences. Part C (Short Answer Type) of each question will be answered 200-250 words. Part D (Long Answer Type) of each question should be answered within the word limit 400-450.*

**Unit-I**

- 1. (A) What do you mean by half and full substractors ? 2
- (B) What is Multiplexer ? 2
- (C) Discuss the basic principle of Encoder. 4

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**Or**

Explain the working of R-S flip flop with suitable diagram with truth table.

- (D) What are Registers ? Explain its different types, and applications in detail. Draw necessary diagram. **12**

**Or**

Discuss 8421 adders, 2's compliment adder and subtracter. Explain with appropriate neat circuit diagram. Also write its applications.

**Unit-II**

2. (A) What do you mean by alphanumeric display units ? **2**
- (B) What is digital display method and digital display units ? **2**
- (C) Explain basic principle of LCD display system ? Write its uses. **4**

**Or**

Explain principle and application of photo detector.

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- (D) Discuss photo diode in following way : **12**

- (i) Principle,  
(ii) Types,  
(iii) Working and applications.

**Or**

What are LED ? Discuss measuring instruments with LED indicators ? Explain its principle and applications.

**Unit-III**

3. (A) What are Reflex Klystron ? **2**
- (B) What do you mean by Magnetron ? **2**
- (C) Discuss advantages and disadvantage of microwave communications. **4**

**Or**

Explain Gunn effect.

- (D) Explain principles of two cavity klystron with suitable diagram. Also write uses of the device. **12**