

M.Sc.(Physics) (CBCS Pattern) Semester - I
PSCPHYT03 - Core Paper-III : Electronics

P. Pages : 2

Time : Three Hours



GUG/S/23/11181

Max. Marks : 80

Either:

1. a) Explain construction and working of NPN and PNP Transistor. 8
b) Discuss in details p-channel JFET. 8

OR

- c) Write short note on: 8
i) LED
ii) Photo transistor
d) Explain construction and working of silicon controlled rectifier. 8

Either:

2. a) Explain in details RC-Coupled amplifier. 8
b) Explain working of JFET Amplifier. 8

OR

- c) Write short note on:
i) Phase shift oscillator. 4
ii) Hartley oscillator. 4
d) Explain transistor as a switch OR, AND and NOT gates. 8

Either:

3. a) Explain Half and full adder with diagram and its truth table. 8
b) Explain working of OPAMP as a adder, differentiator and comparator. 8

OR

- c) Explain working of Astable and monostable multivibrator by using transistor. 8
d) Construct AND, OR and NOT gates by using NAND and NOR gates. 8

Either:

4. a) Explain in detail amplitude modulation. **8**
- b) Write short note on
- i) Frequency modulation. **4**
- ii) Magnetron oscillator. **4**

OR

- c) Explain working of cavity resonators. **8**
- d) Discuss in detail fundamentals of optical instruments. **8**
5. Attempt **all** of the following.
- a) Discuss in detail of Tunnel diode. **4**
- b) Explain construction and working of Zener regulated power supply. **4**
- c) Explain OPAMP on a noninverting amplifier. **4**
- d) Discuss phase modulation. **4**
