PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2018
(First Semester)

Branch - **CHEMISTRY**

BASIC ELECTRONICS FOR CHEMISTS

Time : Three Hours Maximum : 75 Marks

Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 15 = 75)

1 a Draw the symbol of npn and pnp transistors and specifythe leads. (2)
Explain the half wave rectifier with neat diagram. (5)
Explain the working function details about zener diode as voltage regulator. (8)

OR

b Define ohm's law. * /'?)
Explain the operation of transistor as an amplifier. (5)
Explain the full wave bridge rectifier circuit with neat diagram. (8)

2 a Define Multivibrators. (2)
Explain the adder circuit using op-amp. (5)
Discuss in details about inverting and non-inverting amplifier circuits. (8)

OR

Draw the IC 555 pinout diagram. (2)
Explain the opto electronic devices. (5)
Explain in details about astable and monostable multivibrators. (8)

3 a What is octal number system? (2)
Explain the Rs. flip flop with truth table. [5]
Discuss in details about universal gates with truth table. (8)

OR

b Define Flip-Flop. a)
Explain the basic logic gates with truth table. [5]
Explain in details about full adder circuit wdth neat diagram. (8)

4 a Define the term accuracy. , (2)
Explain the decade counter. (5)
Discuss in details about A/D converter. (8)

OR

b What is counter? (2)
Explain the D/A converter. (5)
Explain the working details of binary up *1* down counter with timing diagram. . (8)

5 a What is voltmeter? (?)
Explain the flame photometer. (5)
Explain the working principles of potentiometer with neat diagram. (8)

OR

b How do we convert galvanometer into ammeter? (2)
Explain the pH meter. (5)
Explain the working details about digital thermometer with neat diagram. (8)