DRR-3217
Third Year B. Sc. (Sem. VI) Examination
March / April - 2016
Physics : Paper - X
(PHY - 6010)

Time : 2 Hours] [Total Marks : 50

Instructions :

(1) Fill up strictly the details of signs on your answer book.
   Name of the Examination :
   Third Year B. Sc. (Sem. VI)
   Name of the Subject :
   Physics : Paper - X (PHY - 6010)
   Subject Code No. : 3 2 1 7

(2) Draw neat diagrams wherever necessary.

(3) Symbols used in the paper have their usual meaning.

(4) Figures to the right side indicate full marks of the question.

1 Answer the following as required in brief : 8
   (i) ________ is an 8-bit universal register.
   (ii) Output Y = ________ for 2 to 1 multiplexer.
   (iii) Full form of BCD = ________.
   (iv) ________ is an 4-bit universal register.
   (v) In ionization gauge, the ionization current varies
       ________ with pressure.
   (vi) Knudsen gauge is sensitive at low pressure, down to
       ________.
   (vii) Chemical process of flashing/gettering was suggested by
        ________.
   (viii) Exhaust pumps is a device to exhaust ________.

2 (a) Answer any one of the following in detail : 10
   (i) Construct a 4 bit shift register using J.K. flip-flop
       (Right-Shift register). Explain it’s operation.
   (ii) Construct a 4-bit binary ripple up counter with
        circuit diagram. Explain it’s operation.
(b) Attempt any one of the following in detail.
(i) Explain D flip-flop.
(ii) Explain Digital comparator.

3 (a) Answer any one of the following in detail.
(i) Describe with a neat diagram the construction and working of the pirani gauge.
(ii) Describe with a neat diagram. The principle construction and working of Mcleod Guage. What are it's disadvantages?

(b) Attempt any one of the following:
(i) Explain Exhaust pressures and attainable vacuum.
(ii) Write an advantages of the kundsen gauge.

4 Answer any two of the following.
(i) Explain preset and clear function in a flip-flop.
(ii) Explain the construction and working of Thermocouple gauge.
(iii) Explain 1 to 4 Demultiplexer.
(iv) Write an essay on the production and measurement of low pressures.