



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)

| | |
|--|---|
| नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवही पर अवश्य कपवी. Fillup strictly the details of signs on your answer book. | Seat No. : |
| Name of the Examination : | <input type="text"/> |
| Third Year B. Sc. (Sem. VI) | <input type="text"/> |
| Name of the Subject : | <input type="text"/> |
| Physics : Paper - X (PHY - 6010) | <input type="text"/> |
| Subject Code No. : <input type="text"/> 3 <input type="text"/> 2 <input type="text"/> 1 <input type="text"/> 7 | Section No. (1, 2,.....) : <input type="text"/> Nil |
| Student's Signature | |

- (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. 4
- (i) Explain D flip-flop.
 - (ii) Explain Digital comparator.
- 3** (a) Answer any one of the following in detail. **10**
- (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 Gauge . What are it's disadvantages ?
- (b) Attempt any one of the following : 4
- (i) Explain Exhaust pressures and attainable vacuum.
 - (ii) Write an advantages of the kundsen gauge.
- 4** Answer any two of the following. **14**
- (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.
-