



AD-3217

Third Year B. Sc. (Sem. VI) Examination

March/April – 2015

Physics : Paper - X

(PHY - 6010)

Time : 2 Hours]

[Total Marks : 50

Instructions :

(1)

नीचे दृशावेक निशानीवाणी विगतो उत्तरवडी पर अवश्य कपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="THIRD YEAR B. SC. (SEM. VI)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="PHYSICS : PAPER - X (PHY - 6010)"/>	<input type="text"/>
Subject Code No. : <input type="text" value="3"/> <input type="text" value="2"/> <input type="text" value="1"/> <input type="text" value="7"/>	<input type="text"/>
Section No. (1, 2,.....) : <input type="text" value="Nil"/>	<input type="text"/>
	Student's Signature

- (2) Draw neat diagrams wherever necessary.
(3) Symbols used in the paper have their usual meaning.
(4) Figures to the right indicate full marks of the question.

- 1 Answer the following as required in brief : 8
- Draw the block diagram 1 to N Demultiplexer .
 - Define intrinsic speed.
 - Write any one advantage of rotary oil pump.
 - Draw the block diagram of parallel input, parallel output register.
 - _____ are most used for designing counters.
 - What is Exhaust pump?
 - _____ is an 4 bit universal register.
 - Define Exhaust (E).

- 2 (a) Answer any **one** of the following in detail. 10
- Describe with a neat diagram, the construction and working of a cenco. Hyvac rotary oil pump.
 - Describe, with a neat diagram, the construction of a mercury vapour pump and explain its working. Why does it need a backing pump ?

- (b) Attempt any **one** of the following : 4
- (i) Give advantages of a rotary oil pump.
 - (ii) Explain the construction and working of Thermocouple gauge.
- 3 (a) Answer any **one** of the following in detail. 10
- (i) Construct a 4-bit binary ripple down counter with circuit diagram. Explain its operation.
 - (ii) Construct the Master - slave JK flip-flop with circuit diagram. Explain its operation.
- (b) Attempt any **one** of the following : 4
- (i) Distinguish between combinational and sequential logics circuits.
 - (ii) Explain and convert JK flip-flop into T flip-flop.
- 4 Answer any **two** of the following. 14
- (i) Explain left shift register in brief.
 - (ii) Explain what is meant by the speed of an exhaust pump.
 - (iii) Explain the construction and working of Ionization gauge.
 - (iv) Write short note on Encoders.
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