



Model Paper-I

Exam- 2016

BCA I

Paper- Elementary Physics

Time- 3 Hours

Maximum Marks- 100

I) Very Short Answer Questions **2*10=20**

1. What is shift register?
2. What is digital counter?
3. Define combinational circuit.
4. What is NAND gate
5. What is NOR gate
6. State De'Morgan's Law
7. What is the Dimension of magnetic field?
8. What is magnetic flux?
9. What is the quantum of charge?
10. What is electric line of force?

II) Short Answer Questions (each carrying 4 marks) **4*5=20**

1. What is a D - Flip Flux
2. What is priority encoder?
3. What is meant by a magnitude comparator?
4. Define Boolean algebra.
5. What is Curie temperature?

III) Long Answer Questions **12*5=60**

1. What do you mean by edge triggering? How can achieve positive and negative edge triggering.
2. Construct the MOD-6 counter using J-K flip-flop.
3. Design 32 to 1 multi laxter using 8 to 1 multiplexer IC.
4. State Lenz's law. Explain with the help of example how this law enables one to determine the direction of inducted current in a coil.
5. Explain about semiconductor memory element.



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I) Very Short Answer Questions 2*10=20

1. Which is the best conductor?
2. What is the dimension of magnetic field?
3. What is the value and unit of permittivity of free space?
4. What do you mean by AND Gate?
5. What do you mean by OR Gate?
6. Find resulting $\bar{A} \otimes B$
7. Find resulting $\bar{A} \odot B$
8. What is multiplexer
9. What is Decoder?
10. Define parity checker.
- 11.

II) Short Answer Questions (each carrying 4 marks) 4*5=20

1. What is meant by electric potential?
2. What is magnetic flux?
3. Define universal gate
4. What is minimum terms?
5. What do you understand by Don't care condition?

III) Long Answer Questions 12*5=60

1. What is K-map
2. Write a note on Duality principle.
3. Minimize the following function and realize U any minimum number of gate
 - i. $Y = \sum m (0, 3, 5, 6, 9, 12, 15)$
4. What is 7 segment displays?
5. Describe the decimal BCD encodes.