2411001103040001
EXAMINATION DECEMBER 2024
BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY) (MASTER OF SCIENCE (INFORMATION TECHNOLOGY) 5 YEAR INTEGRATED COURSE)(NCF-NEP)(THIRD SEMESTER)
MDC-FUNDAMENTAL OF ELECTRONICS - LEVEL 4

[**Time: As Per Schedule]** **[Max. Marks:50]**

Instructions:
1. Fill up strictly the following details on your answer book
   a. Name of the Examination: **BACHELOR OF SCIENCE (INFORMATION TECHNOLOGY) (MASTER OF SCIENCE (INFORMATION TECHNOLOGY) 5 YEAR INTEGRATED COURSE) (NCF-NEP) (THIRD SEMESTER)**
   b. Name of the Subject: **MDC-FUNDAMENTAL OF ELECTRONICS - LEVEL 4**
   c. Subject Code No: **2411001103040001**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.

Seat No:

Student's Signature

Q.1 Answer the following questions. **10**

[A] Define the following terms [Any Five] **5**

(1) "ONE WATT"
(2) "ONE HERTZ"
(3) "MUTUAL INDUCTANCE"
(4) "PERMEABILITY"
(5) "CAPACITANCE"
(6) "CONDUCTOR"

[B]Answer following questions in short [Any Five] **5**

1) _____ohm is the resistance value for resistor color band "grean, grean, red, yellow, silver"
2) What is the usage of amplifier?
3) In semiconductor _____ valance electrons are in the valance orbit.
4) What is the full form of "MOSFET"?

5) _____is the majority charge carrier in N-Type extrinsic semiconductor.
6) What is the Boolean equation of Exclusive- OR (X-OR) gate?

Q.2 Answer the following questions in detail **16**

[A] Answer the following questions in detail [Any Two] **10**

1) Write short note on Full wave rectifier.
2) Why NAND gate and NOR gate is called as universal gate?
3) Explain Common Emitter transistor configured circuit in detail.

[B] Answer the following questions in brief [Any Two] **6**

1) What is ohm's law?
2) Describe Bubbled AND gate in detail.
3) Explain and kirchoff's voltage law with the help of necessary circuit diagram and equations.

Q.3 Answer the following questions in detail **16**

[A] Answer the following questions in detail [Any Two] **10**

1) Write short note on SR flip flop
2) Explain Parallel input serial output shift register with the help of necessary circuit diagram, timing diagram and example
3) Explain internal structure of PN junction diode and its Reverse biased characteristics.

[B] Answer the following questions in brief [Any Two] **6**

1) Draw circuit diagram of 16 to 1 multiplexer.
2) Write short note on light emitting diode (LED).
3) Explain AND gate.

Q.4 Answer the following questions in detail **8**

[A] Draw and explain Asynchronous Up-counter circuit with the help of necessary Timing diagram and Truth table. **5**

OR

[A] Write short note on Karnaugh-map(K-MAP) with the help of example **5**

[B] Explain product of sum concept with the help of Example **3**

OR

3

[B] Explain half adder concept with the help of necessary circuit diagram and Truth table.

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