

DOEACC CENTRE CALICUT

(A Unit of DOEACC Society)

An autonomous body of Department of Information Technology, Ministry of Communications and Information Technology, GOVT.OF INDIA

DCCT-1

[Basic Electronics Components & Hardware]

Maximum Marks: 100

Time: 3Hrs

All questions are compulsory and carry equal marks.

PART-1: OBJECTIVE TYPE

Q1 Fill in the blanks, choosing the best answer: (1 mark X 10)

1. is a Universal Gate.
(NAND, AND, NOT)
2. IC 74LS74 is a
(D Flip-Flope, JK Flip-Flope, Octal Buffer)
3. In a Diode, current flow is
(Uni-directional, Bi-Directional)

Q2. State whether True or False: (1 mark X 10)

1. The depletion region expands when reverse biased. []
2. A shorted capacitor has a resistance of zero ohms. []
3. In NPN transistor, the Emitter is composed of P-type material. []

Q3. Match the following with best possible matches. Write the matching sl no. of column A in bracket [] of column B only: (1 mark X 10)

Column A

Column B

- | | | |
|-----------------------|-----|------------------|
| a) Windows XP | [] | Audio indication |
| b) Buzzer | [] | stores 512 bytes |
| c) Sector on a Floppy | [] | Operating System |

Q4. Multiple Choice Questions: Tick the best Answer:

(1 mark X 10)

1. Silicon in its pure form is called []
 - a) Intrinsic Semiconductor
 - b) Extrinsic Semiconductor
 - c) N-type Semiconductor
 - d) P-type Semiconductor

2. A computer program, during execution resides in []
 - a) Main Memory
 - b) Hard disk
 - c) Floppy
 - d) CD-ROM

3. Which of the following shift register deals only with serial data []
 - a) SISO
 - b) SIPO
 - c) PISO
 - d) PIPO

Q5. Multiple Choice Questions: Tick the best Answer:

(1 mark X 10)

1. Which of the following is an input device []
 - a) Printer
 - b) Mouse
 - c) Monitor
 - d) None of the above

2. For lamps of 100 watts each when connected in parallel will consume []
 - a) 25 watts
 - b) 400 watts
 - c) 100 watts
 - d) None of the above

3. A good soldering technique should ensure: []
 - a) that the solder joint appears convex, spherical shaped.
 - b) that the solder forms a strong joint and covers all elements of the joint.
 - c) the solder appears as bright solid without any cracks.
 - d) All of the above.

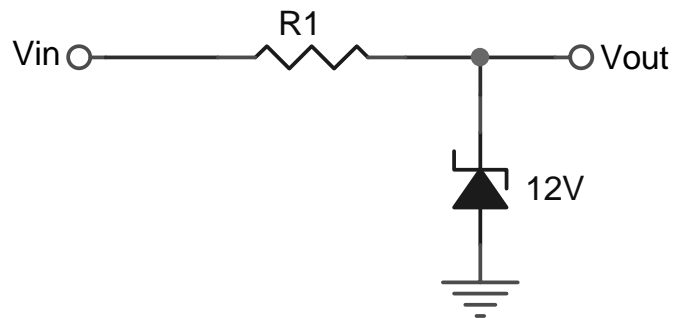
- 3) What is the difference between Passive & Active devices? Give two examples of each?

- 4) Calculate the value of series resistor R1?

What will be the value of 'Vout'?

$V_{in} = 18V$ to $40V_{dc}$.

Zener Current = $3mA$ min, $80mA$ max.



Q7. Answer the following: (2+2+3+3 marks)

(Similar as Question.6)

Q8. Answer the following: (2+2+3+3 marks)

(Similar as Question.6)

Q9. Answer the following: (3+3+4 marks)

1. Explain the working of an RC filter used to filter the output from a rectifier, with necessary circuit diagrams and waveforms.

2. Four lamps of 100 watts each are connected in series and 220V AC is applied across this combination. What will be the current drawn by this combination? What will be the power consumed?

3. Calculate the resistance of a wire whose length is 10cms, area of cross-section is 1 sq.mm and the resistivity is 10 ohm Centimeter.

Q10. Answer the following:

(3+3+4 marks)

(Similar as Question.9)

ROUGH WORK