

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2022
(First Semester)

Branch – COMPUTER TECHNOLOGY

DIGITAL ELECTRONICS AND COMPUTER SYSTEM ARCHITECTURE

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

1. Which of these number systems has a base of 16?
(i) Decimal (ii) Binary
(iii) Hexa-decimal (iv) Octal
2. _____ is an example for combinational circuit.
(i) Flip-flop (ii) Register
(iii) Multiplexer (iv) None of the above
3. Which shift is a microoperation that shifts signed binary number to the left or right?
(i) Logical (ii) Arithmetic
(iii) Both (iv) None of these
4. The collection of all status bit conditions in the CPU is sometimes called _____.
(i) Program Status Word (ii) Trap
(iii) Supervisor mode (iv) Software interrupt
5. The DMA controller has _____ registers.
(i) 4 (ii) 2
(iii) 3 (iv) 1

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

6. (a) Write note on Gray code.
OR
(b) Explain about Binary Logic.
7. (a) Analyze about Encoder.
OR
(b) Explain NOR Implementation with example.
8. (a) Explain about the Memory transfer.
OR
(b) Summarize about Logic microoperations.
9. (a) State about Three-Address instructions.
OR
(b) Narrate about the Data Manipulation instructions.

Cont...

10. (a) Explain Cache memory and Multiprogramming.
OR
(b) Narrate about the Address Mapping using pages.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11. (a) Discuss about Complements with example.
OR
(b) Elucidate about the Digital Logic Gates.
12. (a) Explain in detail about Full Adder.
OR
(b) Explain JK-Flipflop.
13. (a) Summarize on Shift Microoperations.
OR
(b) Point out Binary Adder-Subtractor.
14. (a) Discuss the various Addressing Modes.
OR
(b) Elucidate about Program Interrupt.
15. (a) Discuss about Direct Memory Access.
OR
(b) Summarize about Associative Mapping.

Z-Z-Z

END