Roll No. : .....

Total No. of Questions : **11**] [Total No. of Printed Pages : **3**

DPG–2290

PG Diploma in Computer Application Examination, 2022

COMPUTER ORGANIZATION

Paper - PGDCA-101

*Time : **3** Hours*] [*Maximum Marks : **50***

Section–A **(Marks : 2 × 10 = 20)**

Note :– Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section–B **(Marks : 3 × 5 = 15)**

Note :– Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **3** marks.

Section–C **(Marks : 5 × 3 = 15)**

Note :– Answer any *three* questions out of five (Answer limit **500** words). Each question carries **5** marks.

Section–A

1. (i) What is 1's complement ?

   (ii) Define Overflow.

(iii) Draw 4 × 1 multiplexer diagram.

(iv) What is the use of flip-flop ?

(v) What is the role of I/O processor ?

(vi) Define Asynchronous data transfer.

(vii) Define static RAM.

(viii) What is PROM ?

(ix) What is the work of Address Bus ?

(x) Define Word Size.

Section–B

2. Write down the following number system conversions :

(i) $(4562)_{10} \rightarrow (?)_2$

(ii) $(2D4)_{16} \rightarrow (?)_8$

(iii) $(11110011101)_2 \rightarrow (?)_{16}$

Or

What is the use of 2's complement in binary subtraction ? Explain with example.

3. Explain De Morgan's Law.

Or

Explain JK flip-flop.

4. Explain any *three* peripheral devices.

Or

Explain modes of data transfer.

5. Explain memory hierarchy.

Or

What is the use of cache memory in computer ?

6. Explain register set.

Or

Explain 8085 instruction format.

Section–C

7. Explain booth's algorithm with example.

8. Solve using *k*-map :

$$F(a, b, c, d) = \Sigma(0, 2, 5, 7, 8, 10, 13, 15)$$

9. Explain data transfer using direct memory access.

10. Describe mapping in virtual memory in detail.

11. Explain different addressing modes.