

Bengal St. Xavier's College
Library
Bijonj, Post Box No.-1
735134, Dist.-Jalpaiguri

B II (Three Year G)
Under 1+1+1 System

2017

COMPUTER SCIENCE (General)

FOURTH PAPER

(Revised New Syllabus)

Time : 2 hours

Full Marks : 50

The figures in the margin indicate full marks.

Answer Question No. 5 and any **two** from the rest.

1. (a) What is recursion? What advantages are there in its use?
(b) Define identifier and keyboards. Give examples.
(c) Write a C program to find the factorial of a number using recursion.
(d) Differentiate between structure and union. 3+4+10+3=20
2. (a) Explain different page replacement algorithms in memory management with examples.
(b) Give the safety algorithm (to avoid deadlock) for finding out whether a system is in a safe state or not. 10+10=20

(2)

3. (a) Explain different input/output statements in C language.
- (b) Write a C program to swap the smallest and largest number in a list. 10+10=20
4. (a) Explain multiprocessing and time sharing with examples.
- (b) Explain the use of semaphore in an OS. 10+5+5=20
- (c) What is context switching?
5. Explain different types of function available in C, with example. 10

MR7-780/432

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Raipur, Post Box No.-1

Pin.- 735134, Dist. - Jalpaiguri

B II. (Three Year G)

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2017

COMPUTER SCIENCE (General)

FIFTH PAPER

(Revised New Syllabus)

Time : 2 hours

Full Marks : 50

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Answer **five** questions, taking at least **two** from each Group.

GROUP—A

1. Describe the basic components of a typical computer system with block diagram. 10
2. Compare between the following (any two) : 5×2=10
 - (a) Physical memory and Virtual memory
 - (b) Software interrupt and Hardware interrupt
 - (c) RAM and ROM
3. Discuss about various CPU registers. 10
4. Describe any five addressing modes of a microprocessor. 10

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2016

COMPUTER SCIENCE (General)

FOURTH PAPER

(Revised New Syllabus)

Time : 2 hours

Full Marks : 50

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Answer Question No. 1 and any **two** from the rest.

1. (a) Explain different types of loop available in C programming language.
- (b) Distinguish between the functions of malloc () and calloc ().
- (c) What is the difference between x++ and ++x?
 $6+2+2=10$
2. (a) WAP in C to import a number and check whether the sum of its digits of its square is equal to the number or not.
- (b) Explain different operators available in C.
 $10+10=20$

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GROUP—B

5. Explain system life cycle with any suitable model. 10
6. Write notes on the following (any two) : $5 \times 2 = 10$
 - (a) Data gathering techniques
 - (b) Real time and distributed system
 - (c) Cost benefit analysis
7. (a) Explain flowchart and structured chart. 5
- (b) Describe coupling and cohesion. 5
8. Explain DFD and ERD with diagram. 10

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3. (a) Explain different disk scheduling algorithms with example.

(b) Define deadlock. Explain the necessary condition for a deadlock to occur.

12+8=20

4. (a) Discuss different processor scheduling algorithms.

(b) Discuss internal and external memory fragmentations.

(c) Write a note on 'process control block'.

10+6+4=20

5. (a) WAP in C to print the following triangle :

```

1 2 3 4 5
2 3 4 5
3 4 5
4 5
5

```

(b) What is a structure in C? What are the differences between union and structure?

(c) Explain multiprogramming and time sharing.

10+5+5=20

2016

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GROUP—A

1. Why is bus system required? Explain the bus system of a PC-based system. 10

2. Compare between the following : $5+5=10$

(a) Relative addressing and Indexed addressing

(b) Fixed-point numbers and Floating-point numbers

3. Explain four arithmetic instruction formats of a typical computer. 10

4. (a) What is trap? Why is it used? 4

(b) Discuss the memory hierarchy with the help of a diagram. 6