

Phalguni
8/8/19



ST. LAWRENCE HIGH SCHOOL

A Jesuit Christian Minority Institution



First Term Examination – 2019

CLASS – 11 B, C, D (Model Question & Answers)

Subject: COMPUTER APPLICATION

F.M:70

Time Allotted: 3 hrs 15 min

Date: 06/08/2019

Group - A

- A. Answer the following questions (MCQ type):** [1 × 21 =21]
- Which of the following number methods may be represented in an 8-bit system?
a. ASCII
b. EBCDIC
c. BCD
d. ISCII
 - Stored program concept was introduced by:
a. Charles Babbage
b. Blaise Pascal
c. John Napier
d. Johnvon Neumann
 - Which generation computers used Integrated Circuits?
a. 1st
b. 3rd(Ans)
c. 2nd
d. 4th
 - Which among the following is the most powerful type of computer?
a. Mainframe
b. Microcomputers
c. Supercomputers
d. None of these
 - When power is switched OFF, it will lost its data, such type of memory is classified as:
a. Volatile storage
b. Impact storage
c. Non-volatile storage
d. Non-impact storage
 - Microprocessors with 'n' address lines is capable of addressing _____
a. 2n locations
b. 2ⁿ locations
c. 2⁽ⁿ⁺¹⁾ locations
d. n² locations
 - The storage capacity of recordable DVD is
a. 47 GB
b. 7.4 GB
c. 4.7 GB
d. 1024 GB
 - If the hit ratio of cache memory is 'h', then miss ratio is given by:
a. 1/h
b. 1-h
c. 1/(1-h)
d. h²
 - What is the base of octal number system?
a. 2
b. 16
c. 4
d. 8(Ans)
 - Convert (101100)₂ into its decimal form:
a. 40
b. 41
c. 44(Ans)
d. 39
 - 10 MB is equivalent to:
a. 10 × 1024 TB
b. 10 × 1024 GB
c. 10 × 1024 KB
d. 10 × 1024 bytes
 - (54)₈ + (36)₈ = (x)₈.
a. 100
b. 112 (Ans)
c. 70
d. 102
 - Which generation computers are used in artificial intelligence?
a. 3rd
b. 5th(Ans)
c. 4th
d. none of these

14. The number of transistors etched on a single chip in SSI technology:
- 1 to 100
 - 1000 to 10000
 - 100 to 1000
 - more than 1 million
15. $(1011010)_2 \rightarrow (x)_{10} \rightarrow (5A)_{16}$. What is the value of x?
- 70
 - 90(Ans)
 - 80
 - 100
16. Which is a kind of impact printers?
- Plotter
 - Laser printer
 - Dot matrix printer
 - Inkjet printer
17. Which computer application scans text and converts into readable form in computer?
- Optical Scanner Reader
 - Optical Character Recognition
 - Optical Marker Recognition
 - Optical Character Evaluator
18. _____ used tables carved on wood or ivory sticks.
- Stepped reckoner
 - Punched cards
 - Napier's bone
 - Pascline
19. Which language helps us to prepare queries?
- C++
 - SQL
 - Java
 - all of these
20. Which bus is used to send power to different components of the computer system?
- Power bus
 - Address bus
 - Control bus
 - data bus
21. The stored data in _____ can be erased by exposing it to UV light.
- PROM
 - EEPROM
 - EPROM
 - all of these

Group – B

B. Answer the following questions (Short Answer Type)

[1 × 14 = 14]

- Write a short note on Napier's bones.
Ans : Logarithm values were carved on ivory or wooden sticks called Napier's bones.
- Who is known as the 'Father of Computers'?
Ans : Charles Babbage is known as the 'Father of Computers'.
OR
Who invented Pascaline?
Ans : Blaise Pascal invented Pascaline.
- Which technology was used in third generation computers?
Ans : Integrated circuits
- What is an integrated circuit?
Ans : It is a miniature electronic circuit comprising of active and passive components.
OR
Write the full form of EEPROM.
Ans : EEPROM = Electrically Erasable Programmable Read Only Memory
- What is the difference between a supercomputer and mainframe computer?
Ans : A supercomputer channels all its power into executing a few programs as fast as possible, whereas a mainframe uses its power to execute many programs concurrently.
OR
What semiconducting material is used for making IC?
Ans : Silicon and germanium.
- Name any two application areas of supercomputers.
Ans : Animation and fluid dynamic calculations.
OR
Define impact-printers with suitable example.
Ans : The impact-printer work by physically striking a head or needle against an ink ribbon to make a mark on the paper. Ex – Dot-matrix printer

7. Convert $(227)_8$ into its decimal form.
Ans : $= (2 \times 8^2) + (2 \times 8^1) + (7 \times 8^0) = (151)_{10}$

8. Find out the 2's complement of $(101011)_2$.
Ans : $(010101)_2$

OR

Add $(10000)_2$ and $(10111)_2$.

$$\begin{array}{r} 10000 \\ +10111 \\ \hline 100111 \leftarrow (\text{Ans}) \end{array}$$

9. Write 35_{10} in BCD code.
Ans : $(0011\ 0101)_{\text{BCD}}$
10. What is the 1's complement of $(100010)_2$?
Ans : $(011101)_2$

11. What do you mean by data bus?
Ans : Data bus is a group of electrical wires used to send information (**data**) between two or more components.

OR

Write any two advantages of ASCII code.

Ans : i. Detection and correction of errors is simpler in ASCII coding.

ii. The keys used on the keyboard of personal computers are represented using the ASCII code.

12. Write a short note on EEPROM.

Ans : The information written on this can be erased using electrical signals.

OR

What is the advantage of integrated circuits over discrete circuits?

Ans : Reduction in manufacturing cost and enhanced performance.

13. Define sorting.

Ans : It is the arrangement of data into some logical order to facilitate processing.

OR

Write the full form of EBCDIC.

Ans : EBCDIC = Extended Binary Coded Decimal Interchange Code

14. What do you mean by data manipulation?

Ans : It involves the actual operation of presenting the data in a meaningful order by way of sorting, calculating, merging and so on.

Group – C

C. Answer the following questions (Descriptive Type)

[7 × 5 = 35]

1.

- a. Mention the names of four types of positional number systems along with the base or radix they use. Convert $(15)_{10}$ into its equivalent binary. [3]

Ans : Decimal Number system (base-10), Binary Number system (base-2), Octal Number system (base - 8) and Hexadecimal Number system (base- 16).

2	15	1	↑ (1111) ₂ ←(Ans)
2	7	1	
2	3	1	
2	1		

- b. Find the following binary sum – $(1101)_2 + (1001)_2$ [2]

$$\begin{array}{r} \text{Ans : } 1101 \\ + 1001 \\ \hline 10110 \leftarrow (\text{Ans}) \end{array}$$

- c. What is the advantage of 2's complement over other methods? [2]

Ans : It does not yield two zeroes.

OR

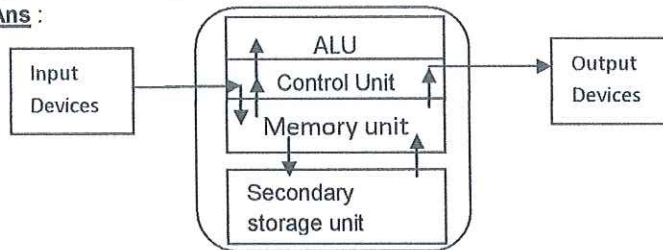
a. Differentiate between fixed point and floating point numbers. [3]

Ans:

Fixed point numbers	Floating point numbers
Used to represent a limited range of values.	Used to represent a wide range of values.
Higher performance	Lower performance
Less flexible	More flexible

b. Draw the block diagram of computer. [4]

Ans :



2. Find the following :

a. $(111.011)_2 + (10011.001)_2$ [2]

Ans :

$$\begin{array}{r} 10011.001 \\ +00111.011 \\ \hline 11010.100 \leftarrow (\text{Ans}) \end{array}$$

b. Multiply $(110.01)_2$ by $(10)_2$ [3]

Ans:

$$\begin{array}{r} 110.01 \\ \times 10 \\ \hline 0000 \\ 11001 \\ \hline 1100.1 \leftarrow (\text{Ans}) \end{array}$$

c. Subtract $(1101)_2$ from $(10110)_2$ [2]

Ans:

$$\begin{array}{r} 10110 \\ - 01101 \\ \hline 01001 \leftarrow (\text{Ans}) \end{array}$$

OR

a. Name the five steps involved in data processing. [3]

Ans: Data collection; Data conversion; Data processing; Information storage; Information output

b. What are the different types of error? Also write the source of errors. [4]

Ans: Data source error – Incorrect data recorded on the source document.

Transcription error – data is read or typed incorrectly.

Transposition error – two consecutive digits are swapped.

3.

a. Mention the methods of representing negative numbers. Represent $(-17)_{10}$ in each method. [4]

Ans : Sign and magnitude representation : 100010001

1's complement : 11101110

2's complement : 11101111

5.

- a. Classify computers based on data handling and explain them briefly. [3]

Ans : Analogue :- Such computers are designed for measurement. They do not directly deal with the numbers; rather they measure continuous physical parameters.

Digital : Digital computers deal with all kind of information digitally, that is, 0s and 1s.

Hybrid : They use features from both digital and analogue computers.

- b. Write a short note on flash memory. [2]

Ans : Flash memory is a non-volatile memory chip used for storage and for transferring data between a computer and digital devices. It has the ability to be electronically reprogrammed and erased. It is often found in USB flash drives, MP3 players, digital cameras and solid-state drives.

- c. Mention any two characteristics of cache memory. [2]

Ans :

- Improves CPU performance.
- Operates at or near the speed of the processor.

OR

- a. Briefly describe the data processing model. [5]

Ans : Data collection – it involves collection of raw data. Data conversion: - It is the pre-processing of data into a form that is suitable for processing. Data processing: - It involves the actual operation of presenting the data in a meaningful order. Information storage: - It involves systematic storage of processed information of easy retrieval. Information output: - It is presenting the information in different formats.

- b. What is a plotter? [1]

Ans : A plotter is a printer that interprets commands from a computer to make line drawings on paper with one or more automated pens. It can draw continuous point-to-point lines directly from vector graphics files or commands.

- c. Write down the functions of ALU. [1]

Ans : It is a digital circuit used to perform arithmetic and logic operations.