



As per latest guidelines of NEP & NCF



6



# Terabyte

(A Series of Computer Books)

## ANSWER KEY





# 1 COMPUTER LANGUAGES

## Section - A :—

### (A) Multiple choice questions:

1. (d) 2. (c) 3. (b) 4. (d) 5. (a)

### (B) Fill in the blanks:

1. Machin
2. Second
3. English Language
4. High-Level, Machine
5. Quick beginners all purpose symbolic instructions code.

### (C) State whether following statements are T or F:

1. (F) 2. (F) 3. (F) 4. (T) 5. (T)

### (D) Application based questions:

1. He should choose machine language.
2. No, She should not use machine language because it non-portable.
3. No She does not need it.

### (E) Answer the following:

1. Features of machine language :
  - i) It uses only two symbols named 0 and 1.
  - ii) It is directly understood by computer without any transiation.
  - iii) It is the most efficient language, requires minimum time for exclusion.
  - iv) It is also called as first generation language or binary language.

Ans - 2

Compiler

- i) It converts HLL program to ML program as a whole.
- ii) It requires more main memory.
- iii) It takes less time for execution.
- iv) Debugging and testing is slow.

Interpreter

- It conuerter HLL program to ML program line by line.
- It requires less main memory.
- It takes more time for execution.
- Debugging and testing is fast.

### 3. Features of object oriented language :

- i) It is also know as fourth generation language (4GL).
- ii) It uses the concept of recusability.

iii) It is more suitable for real - world problems.

iv) It uses concepts of inheritance i.e getting some characteristics of already written coding.

4. Feature of c language are :

i) It is Mid-level programming language.

ii) It is structured programming language.

iii) It is machine independent or portable.

iv) C language provides a lot of inbuilt functions that make the development fast.

5. Source Program

i) Is a collection of instructions written using a programming language.

ii) Source programs contain english words according to the syntax of programming language.

iii) Source program is the input to the compiler.

Object Program

Is an output generated after compiling the source program.

Object program consists of binaries.

Object program is the output of the compiler.



Answer Key

Class - 6

## 2 USER ACCOUNTS IN WINDOWS

Section - A :—

**(A) Multiple choice questions:**

1. (d) 2. (c) 3. (b) 4. (a)

**(B) Fill in the blanks:**

1. Shree
2. Administrative
3. Guest
4. Standard Account

**(C) State whether following statements are T or F:**

1. (T) 2. (F) 3. (T) 4. (T) 5. (F)

**(D) Application based questions:**

1. → Add someone else of this PC button → I don't have this person Sig - in information option → Add a user without a account → user name & password → three search questions answer then one by one → click on next button.
2. He should click an family & other user option, then click on the account that you want to change to administration accounts then click on change account type window is displayed then select administrator option and click an next button.

**(E) Answer the following:**

1. Administrator account has access to the entire computers and can make any desired changes. In administrator depending upon notification setting, It may be asked to provide his confirmation before making any changes that affects other user.
2. Standard account is the basic account meant for a user. This account can be use most of the software and change system setting that do not affect othre users or the security of the computer.
3. Steps to create standard account :
  - i) Click on start button. A menu displayed.
  - ii) Click on setting option. Settings window is displayed.
  - iii) Click on accounts button.
  - iv) Click on family & other users optins.
  - v) Click on add someone else to this PC button.
  - vi) Click on I don't have this person sign-in information option.
  - vii) Click on add a user without a account option.
  - viii) Enter user name and password.
  - ix) Select three search questions and answer them one by one.
  - x) Click on next button. New standard account will be created.
4. Steps to change the accounts type :
  - i) Click on start button. A pop-up menu displayed.
  - ii) Click on setting option. Setting window is displayed.
  - iii) Click on acurunts button.
  - iv) Click on family & other user option.
  - v) Click on the acurunt that you want to change to admintrator account.
  - vi) Click on change account type window is displayed.
  - vii) Click on arrow head of acurunt type section.
  - viii) Select administrator option and click on next button. Selected standard account is changed to administrative account.



# 3 MOVING AHEAD WITH WORD

Section - A :—

**(A) Multiple choice questions:**

1. (a) 2. (b) 3. (a) 4. (c)

**(B) Fill in the blanks:**

1. Word
2. LEN
3. Splitting cells
4. Merging cells
5. Cell size

**(C) State whether following statements are T or F:**

1. (T) 2. (F) 3. (F) 4. (T) 5. (T)

**(D) Application based questions:**

1. She should choose table option under Insert tab.
2. Click on formula button in the dat group under layout tab to apply the formula.
3. Table tools button in table group under layout tab to solve this.

**(E) Answer the following:**

1. Steps to insert columns and rows in table :
  - i) Click on a column adjacent to which you want to insert a column.
  - ii) Right-click the mouse.
  - iii) Select Insert option in the menu. A submenu is displayed.
  - iv) To insert column on right, select insert columns to the right options.
2. Steps to delete column and Row in table.
  - i) Select the columns and rows that is to be deleted.
  - ii) Right-click the mouse. Drop down menu is displayed.
  - iii) Click on delete columns to delete column and select delete cells option in the menu, select delete entire row option. The selected rows is deleted.
3. Steps to resizing the table are :
  - i) Click anywhere in table. A new tab namely layout is display under table tools.
  - ii) Click on this layout tab.

- iii) Click on Autofit button in cells size group. Autofit drop down menu is displayed.
4. We can perform calculations by following steps .
- Select the cell where you want to display the result.
  - A new tab namely layout is displayed under table tools.
  - Click on this layout tab.
  - Click on formula button in Data group.
  - Type the formula in formula box.
  - Click on arrow head in number format box.
  - Click on OK button to finalize the process.
5. Steps to delete a table in word are :
- Click on file and open file in document.
  - File will open with table, Hover your cursor over the table. When the mouse is over the table a four directional arrow will appear on left corner.
  - Right-click the four directional arrow.
  - Select delete table on the menu or cut option.



## 4 MORE ON WORD

### Section - A :—

#### (A) Multiple choice questions:

1. (a) 2. (d) 3. (a) 4. (d) 5. (b)

#### (B) Fill in the blanks:

- Hyper link
- Watermark
- Macro
- Stop Rewrding

#### (C) State whether following statements are T or F:

1. (T) 2. (T) 3. (T) 4. (F) 5. (F)

#### (D) Application based questions:

- Watermark is the facility of word that can fulfill her purpose.
- Macro is a program which will help Arjun to perform these activities quickly with minimum effort.

3. Yes, It is possible with the help of Hyperlink.

**(E) Answer the following:**

1. Hyperlink is a selectable object that includes the path information to another object. Hyperlink is a facility that allow you to move control to other desired document just by a click on specified text/symbol in the current document.
2. Watermark is a text/symbol displayed in light color in the background of a document. Watermarks are reliable way to label and identify sensitive, legal and prvide documents Since we can't miss seeing a watermark.
3. Macros is a small program. It consists a to set of commands reclorded. Each macro is assigned a name or shortcut key.
4. Steps to create macros :
  - i) Click on view tab.
  - ii) Click on arrow head macros button.
  - iii) Selected record mocro option. Record Macro dialog box is displayed.
  - iv) Type the Macro name in Macro name box. Click on keyboard button.
  - v) Type the shortcut key in press new shortcut keybox.
  - vi) Click on assign button and then close button.
  - vii) Perform a set of actions to insert a picture.
  - viii) In view tab, click on arrowhead of Macro button.
  - ix) Click on stop recording option in the displayed dropdown menu.
  - x) The set of actions performed is recorded in the mentioned short-key.
5. Steps to insert hyperlinks :
  - i) Select the text/symbol that is to be hyperlinked.
  - ii) Click on insert tab.
  - iii) Click Hyperlink button. A box is displayed.
  - iv) Use arrow head of look in box to select the document to which selected text/symbol is to be hyperlinked.
  - v) Click on OK buttons to finalize the selection made.
6. Steps to apply of watermark are :
  - i) Open the document to which watermark is to be applied.
  - ii) Click on Design tab.
  - iii) Click on arrowhead of watermark button.
  - iv) Select the desired watermark. The selected watermark is applied.

- v) If no suitable watermark found in step 3 dialog box, click on custom watermark option in the dialog box.
- vi) Select the desired option radio button by clicking on it.
- vii) Make suitable selections such as language font size and layout in respective boxes/buttons
- viii) Click on OK button to finalize the selections made.



# 5

# MAIL MERGE

## Section - A :—

### (A) Multiple choice questions:

1. (b) 2. (a) 3. (a) 4. (a)

### (B) Fill in the blanks:

1. Mail merge
2. Main document
3. Data source
4. Mailing
5. Preview results

### (C) State whether following statements are T or F:

1. (T) 2. (F) 3. (T) 4. (T) 5. (F)

### (D) Application based questions:

1. With the help of Main document feature he can do it.
2. Mail merge.
3. No, it is not. Click on insert merge field button in write & insert fields.

### (E) Answer the followings:

1. Mail merge combines two documents called main document and data source. Mail merge is a feature to prepare letters with same information addressed to different person/or organizations.
2. i) Main document : It contains the general text we want to send to many recipients. It remains same for all the recipients and is called letter body.  
ii) Data source : It contains the mailing list i.e name, address etc.. of recipients. It is different for different recipients.

3. To create a mail merge document, perform following steps :
  - i) Create a new document or open an existing document that contains the general text.
  - ii) Click an Mailing tab.
  - iii) Click on start Mail merge button. A drop down menu is displayed.
  - iv) Select step by step Mail merge wizard option from the menu.
  - v) Select letters option available in select document type area.
  - vi) Click on Next : Starting document available under step 1 of 6 area.
  - vii) Click on use the current document option under select starting document area.
  - viii) Click on Next : Select recipients under step 2 of 6 area.
4. Data source contains the mailing list i,e name, address etc.. & recipient. It is different for different recipients. For example : It is list of names of friends and addresses.
5. Merge fields in word are used to present the information correctly in the documents. It is a placeholders in the document for unique information from the recipients list.



# 6

Answer Key

Class - 6

## EXCEL 2021

Section - A :—

**(A) Multiple choice questions:**

1. (c) 2. (d) 3. (b) 4. (a) 5. (c)

**(B) Fill in the blanks:**

1. Spread sheet
2. Equal sign (=)
3. Special character
4. 3
5. Tittle bar

**(C) State whether following statements are T or F:**

1. (F) 2. (F) 3. (T) 4. (T) 5. (T)

**(D) Application based questions:**

1. Yes, it is possible to add more number of worksheet in his workbook by right click on the sheet tab before you want to insert a new worksheet then click on Insert option in the menu. Click on worksheet button. Click on OK button to confirm the selection mode. A new worksheet is inserted.

2. Yes, we can change name of worksheets in the workbook by Right-click on the name (available in status bar) want to rename. Click on rename option in the menu. Worksheet name is highlighted. Type the new name. Name of the worksheet is changed to the typed new name.
3. Yes, A formula must begin with an equal sign (=) Followed by expression.

**(E) Answer the following:**

1. Spread sheet software is an application software designed to handle large volume of data efficiently. It provides various commands and tools to make large volume data handling easy, quick and efficient. It is also termed as spreadsheet package.
2. Workbook is a collection of worksheets. It is just like a book that has number of pages. Names of various sheets available in workbook displayed in status bar which is located at the bottom. By default there are 3 worksheets in a workbook.
3. Steps for renaming the worksheet are :
  - i) Right-click on the name (available in status bar) want to rename. A pop-up menu is displayed.
  - ii) Click on rename option in the menu. Worksheet name is highlighted.
  - iii) Type the new name. Name of worksheet is changed to the typed new name.
4. Three major data types are supported by Excel :
  - i) Number or numeric Data type
  - ii) Text
  - iii) Formula
5. Active cell are current cursor position cell. The entered data is placed in the active cell. An active cell is indicated by a thick black border.



# 7 EDITING DATA IN EXCEL

Section - A :—

**(A) Multiple choice questions:**

1. (d)
2. (a)
3. (a)
4. (a)
5. (a)

**(B) Fill in the blanks:**

1. Auto fill
2. Ctrl + C and Ctrl + V

3. Row
4. Two
5. Ctrl + X and Ctrl + V

**(C) State whether following statements are T or F:**

1. (T)
2. (F)
3. (F)
4. (T)
5. (T)

**(D) Application based questions:**

1. Using F8 key she can perform the activity.
2. He should click on Row height option in drop down menu. Row height dialog box displayed.
3. Auto fill facility of Excel meets his requirement.

**(E) Answer the following:**

1. Steps to Insert a new Row are :

- i) Click on a row where you want to insert a new row.
- ii) Click on Home tab.
- iii) Click on Insert button in cells group. A menu is displayed.
- iv) Select Insert sheet Rows option from the menu.

2. There are two methods to select cells in Excel :-

Method 1 : Dragging the Mouse

1. Click on the first cell of the range to be selected. This cell becomes active cell.
2. Move pointer to lower right corner of the cell. Cell pointer changes to a + sign.
3. Hold down the left mouse button and drag the mouse button and drag the mouse pointer diagonally to the last cell of the range.

Method 2 : Using F8 key

1. Click on the first cell of the range to be selected.
2. Press F8 key. The Extended selection indicator is displayed in status bar.
3. Click on the last cell of the range. Desired cell range is selected.

3. Steps to delete cell contents :

- i) Select cell range whose contents are to be delete.
- ii) Right-click on the selected part.
- iii) Select clear contents option. In the drop down menu. The selected range contents are deleted.

\* Steps to copy cell contents :

i) Select the cell range whose contents are to be copied.

ii) Press Ctrl + C

iii) Move cursor to the first cell of the area where you want to copy the selected contents.

iv) Press Ctrl + V

4. Steps to change the row width :

i) Select the block of rows whose width is to be changed.

ii) Click on Home tab.

iii) Click on arrow button of format button in cells group tab. A drop down menu is displayed.

iv) Click on Row width option in drop down menu.

v) Enter the desired Row width in Row width box.

iv) Click on OK button to confirm the selection made.



# 8

Answer Key

## ARTIFICIAL INTELLIGENCE

Class - 6

Section - A :—

**(A) Multiple choice questions:**

1. (d) 2. (b) 3. (c) 4. (b) 5. (b)

**(B) Fill in the blanks:**

1. Artificial Intelligence (AI)
2. Weak AI, Strong AI, Super AI
3. Symbols, numbers
4. Reasoning
5. LISP and PROLOG

**(C) State whether following statements are T or F:**

1. (T) 2. (T) 3. (T) 4. (T) 5. (T)

**(D) Application based questions:**

1. Yes, (NLP) Natural Language Processing area of AI will help.
2. Expert system field of AI can help.
3. Automation field of AI can help as it means more computer use and less human interference.

**(E) Answer the following:**

1. (AI) Stands for Artificial Intelligence. It is a branch of computer science that enables computers to perform tasks requiring human intelligence. The term AI was invented by John MC Carthy in 1950.

\* Types of AI are manily three :

- i) Weak AI : It focuses on one task and cannot perform beyond it's limitation.
- ii) Strong AI : It focuses on unders tonding and learning any intelleuctual task the human being can.
- iii) Super AI : It focuses on surpassing human intelligence to perform a task better than human.

2. Strong AI

- i) It focuses on understanding and learning any intellectional task that a human can.
- ii) Reseachers are making great effort to reach strong AI.

Super AI

It focuses on surpassing human intelligence to perform a task better than human.  
It is still a concept for away from reality.

3. Three characteristics of AI are :

- i) Reasoning : It is the ability to solve problems through logical deduction. AI works on this logical diduction principle.
- ii) Communication : AI involves the ability to communicate in human language, understanding people's intentions and emotions through natural language processing techniques.
- iii) Fast Decision Making : AI has the ability to help in fast decision making. MOST innovative organizations such as facebook, Google rely on AI algorithms for their fast decision making process.

4. Advantages of AI :

- i) High Reliability : AI machines are highly reliable and can perorm the same action multiple times with high accuracy.
- ii) Less Errors : AI system take decisions on the basis of information and pre-experience.
- iii) Useful as a Public Utility : AI is quite useful for public utilities such as self-driving car facial recognition and natural processing.

5. Disadvantages of AI :

- i) High - Cost : Due to complex and large volume of data processing, AI system requires costly hardware and software.
  - ii) Machine Dependency : Due to more and more dependency on AI, people are losing their mental capabilities.
  - iii) No Original Creativity : AI is not creative. It simply follows the traditional human thinking pattern.
6. Three Application Areas of AI are :
- i) Natural Language Processing (NLP) : Another area of AI is to develop a system that can understand and responds to natural language such as English or Hindi.
  - ii) Robotics : It is a field of AI that enhances the ability to move and execute specially where human movement is risky.
  - iii) Machine Learning : It is a field of AI that is concerned with design and development of algorithms and techniques that allow computers to learn.
7. Robotics is field of AI that enhances the ability to move and execute specially where human movement is risky e.g. in nuclear plant or mines. AI is applicable to robotic in two ways : Design/Control of robot in execution.



Answer Key

Class - 6

## 9 MACHINE LEARNING

Section - A :—

**(A) Multiple choice questions:**

1. (d) 2. (a) 3. (a) 4. (a) 5. (b) 6. (d)

**(B) Fill in the blanks:**

1. Artificial Intelligence
2. Model
3. Feature
4. Supervised Learning
5. Reinforcement

**(C) State whether following statements are T or F:**

1. (F) 2. (T) 3. (F) 4. (F) 5. (T)

**(D) Application based questions:**

1. Web Search Engine field of artificial intelligence can help.

2. No, it is not possible in a very short time.
3. Unsupervised learning it should follow.
4. Reinforcement learning is most suitable for it to make future predictions with high accuracy.

**(E) Answer the following:**

1. Machine Learning is an application of Artificial intelligence that enables computer into a mode of self-learning, prediction and improving itself on the basis of input data without being programmed explicitly.
2. Three types of Machine Learning are :
  - i) Supervised Learning : In this type of learning computer is trained under the guidance of some trainer/teacher by providing sample Inputs and their Outputs.
  - ii) Unsupervised Learning : In this type of learning the machine is not provided labeled data along with the correct output by some trainer/teacher. Machine is provided only data and asked to find the possible output itself without guidance.
  - iii) Reinforcement Learning : This type of learning is based on the principle of trial and continuous improvement based on feedback from experiences. It works on continuous feedback to get positive swres. For eg : Self-driving car
3. Unstructured Learning or Unsupervised Learning the machine is not provided labeled data along with the correct output of some trainer machine is provided only data and asked to find the possible output and pattern itself without guidance of some teacher/trainer.

\* Disadvantage are :

- i) Initially results may be wrong.
- ii) Pattern discovered by machine may or may not be valuable to you.
- iii) No human interaction, so initially machine is not able to check correctness of classification made by it.

4. Structured Learning
  - i) The learning model is presented with an input and desired output.
  - ii) It requires a labeled data set for training.

Reinforcement Learning

It learning agent is presented with an environment and must guess correct output.  
It does not require data

5. Advantages of Machine Learning are :

- i) Automation : With ML, you need not to intervene your project at every step. It enables machine to learn & make predictions, makes system automated.
- ii) Wide Applications : It can serve wide range of application whether it is healthcare or natural language processing or auto driving.
- iii) Multi - dimensional : ML algorithms are good at handling multi - dimensional and multi - variety data.

6. Disadvantages of ML are :

- i) Data collection : ML requires large volume of unbiased good quality data. This is quite time consuming.
- ii) Costly Hardware : ML needs to process large amount of data with accuracy. This requires massive resources.
- iii) High Error : ML is highly prone to errors. An algorithm with given small set of data may not be sufficient for accurate predictions and results in chain of errors.

7. There are some major challenges in the field of machine learning.

- i) Quality of Data : ML requires good quality unbiased data. This is time consuming and expensive.
- ii) Lack of experts : ML is still in its childhood so availability of experts resources is a tough job.
- iii) Difficulty in Implementation : Due to its complexity, it is quite difficult to implement it in real life.
- iv) Overfitting & underfitting : If the model is overfitting or underfitting, it cannot be represented well for the problem.



Answer Key

Class - 6

# 10 INTRODUCTION TO PYTHON

Section - A :—

**(A) Multiple choice questions:**

1. (d)    2. (c)    3. (c)

**(B) Fill in the blanks:**

1. WWW browsers
2. .PY
3. Interactive, Script

4. Command Prompt (>>>)

5. Editor

**(C) State whether following statements are T or F:**

1. (T) 2. (F) 3. (T) 4. (F) 5. (T)

**(D) Application based questions:**

1. He should select interactive mode.
2. Yes, from website [www.python.org/downloads/windows](http://www.python.org/downloads/windows).
3. She should select script mode. To write program in script mode, an editors are used Notepad, Norton editor.

**(E) Answer the following:**

1. Features of Python are :

- i) It is quite easy to learn as it has few keywords, simple structure and clearly defined syntax.
- ii) It provides interactive mode, so immediate execution is possible.
- iii) It provides large number of library functions.
- iv) It is free i,e it can be downloaded with any charges.

2. Steps to start python :

- i) Click on windows start button and type idle (or IDLE). IDLE (Python 3.764-bit) app icon is displayed.
- ii) Click on IDLE (Python 3.764-bit) app icon.  
Python 3.7.4 shell window is displayed.

3. Major Components of Python Window are :

- i) Tittle Bar : It is located at the top of window and displays the name of the application and the document.
- ii) Menu Bar : It is located just below the tittle bar. It display various tabs such as :- Fill, edit, shell, debug, options, windows and help.
- iii) Script Area : This is the blank area where you enter your wide.
- iv) Status Bar : It specifies the current status of your control/cursoron the window.

4. Interactive Mode

- i) It is a command line shell that gives immediate results for the entered command.

Script Mode

In case of long programs, this may create confusion.

- ii) To write command in this no need of editor.
- iii) It is used when an user wants to run one single line of code.

To write program in this mode an editor is used. It is used when the user is working with more than one singlecode.

#### 5. Steps to work in interactive mode :

- i) Click on window start button and ty idle. IDLE (Python 3.7.64-bit) app icon is displayed.
- ii) Click on IDLE (Python 3.764-bit) app icon. Window is displayed in which python prompt (>>>) is displayed.
- iii) Type some expressions/commands next of python prompt. The result are displayed immediately.

#### 6. Steps to work in script mode in Python :

- i) Click on windows start button.
- ii) Type idle or IDLE. IDLE (Python 3.764-bit) app icon is displayed.
- iii) Click on IDLE (Python 3.764-bit) app icon. Python shell window is displayed.
- iv) Click on File tab. A drop down menu is displayed.
- v) Click on new file option in the menu.
- vi) Type the commands that you want to save as program.
- vii) To save the program, Click on file tab and click on save option.
- viii) Enter the name of program file in file name box and select Python files in save as type box. With on pxtension. Py is added automatically.
- ix) Click on save button file will be saved.

#### 7. Steps to run a program in python are :

- i) Click on windows start button and type idle or IDLE. IDLE (Python 3.764-bit) app icon is displayed.
- ii) Click on IDLE (Python 3.764-bit) app icon. Python shell window is displayed.
- iii) Click on open option is file tab. Open dialog box is displayed.
- iv) Click on file that you want to run.
- v) To run the opened file, Press F5 key. Program file is executed.



# 11

# BASICS OF PYTHON

Section - A :—

**(A) Multiple choice questions:**

1. (c) 2. (c) 3. (d) 4. (b) 5. (c)

**(B) Fill in the blanks:**

1. 5
2. Predefined
4. Hash
5. Input ( )

**(C) State whether following statements are T or F:**

1. (T) 2. (F) 3. (F) 4. (F) 5. (F)

**(D) Application based questions:**

1. She should use % modulus operator.
2. He should use comments in Python to write the statement.
3. Input ( ) function she should include in her program.
4. Print ( ) function is used to display result of his program on a standard output device.

**(E) Answer the following:**

1. Character set of language is set of valid symbols acceptable in that language. Character set of Python is a set of valid symbols acceptable in python. It can be classified into 5 parts.
2. Reserve word designate special language functionality. No other variable can have the some name as these keywords. In programming language is a word that has a predefined meaning in the language.
3. Data types of a variable specifies the type of values that can be assigned to that variable. Some major data types in Python are : Numbers, strings, list and Tuples.
4. Arithmetic Operators are the operators used to perform addition, subtraction, multiplivation, division, etc.. All arithmetic operators are binary operators i.e they require two operands.

\* Various arithmetic operators in Python are :

- i) Addition (+)

- ii) Subtraction (-)
- iii) Multiplication (\*)
- iv) Division (/)
- v) Floor Division (//)
- vi) Modulus(%)
- vii) Exponent (\*\*)

5. I) Operator

- i) It is division operator
- ii) It divides left hand operand by right hand operand.
- iii) For eg :  $b/a$  gives 2

II) Operator

It is floor division.

It divides left hand operand by right hand operand and gives output as nearest integer equal to less than original value :  
For eg :  $5/2$  gives 2,  $8/3$  gives 2,  $-5/2$  gives -3

- 6. Rational Operators are used to check the relationship between operands by comparing. (Such as greater than less than etc) the two operands. All rational operators are binary operators and return value true or false.
- 7. Input ( ) function takes input from the user during program execution and converts that value to string.
- 8. Print ( ) function is used to display the output (i.e. message or value) on the standard output device. It automatically converts the output to string.

## Sample Paper - 1

**(A) Choose the right answer :**

1. (b) 2. (b) 3. (c) 4. (c)

**(B) Fill in the blanks:**

- 1. Interpreter
- 2. Administrator
- 3. Merging
- 4. Hyperlink

**(C) State whether following statements are T or F:**

1. (T) 2. (T) 3. (F) 4. (F)

**(D) Answer the following:**

- 1. Four features of good programming language are :

- i) Simple : It should be simple i.e it should be easy to learn, understand and write program in the language.
- ii) Efficient : It should require less memory space and less execution time.
- iii) Structured : It should be structured language as it makes debugging much easier.
- iv) Complete and Compact : It should be complete i.e it should provide all necessary features.

2. **Compiler**

- i) It converts HLL Program to ML Program as a whole.
- ii) It takes less time for execution.
- iii) Debugging and testing is slow.
- iv) It requires more main memory.

**Interpreter**

- It converts HLL Program to ML Program line by line.
- It takes more time for execution.
- Debugging and testing is fast.
- It requires less main memory.

3. Three types of user-account are :

- i) Standard Account : It is the basic account meant for a user. This account can use most of the software and change system settings that do not affect other users or the security of the computer.
- ii) Administrator Account : This account has access to the entire computer and can make any desired changes. In this account administrator may be asked to provide his confirmation before making any changes that affect other users.
- iii) Guest Account : Is assigned to a user that requires computer for a temporary period.

4. Steps to change standard account to administrative account :

- i) Click on start button. A pop-up menu displayed.
- ii) Click on setting option. Settings window is displayed.
- iii) Click on accounts button.
- iv) Click on family & other user option.
- v) Click on the account that you want to change to administrator account.
- vi) Click on change account type window is displayed.
- vii) Click on arrow head of account type section.
- viii) Select administrator option and click next button.

5. Steps to changing column width are :

- i) Select the column whose width is to be changed.
- ii) Click on layout tab.
- iii) Click on properties button in table group.

- iv) Click on column tab.
  - v) Specify the desired column width using up and down arrows in preferred width box.
  - vi) Click on OK button to finalize the selections made.
6. i) Splitting a cell : In excel splitting a cell means to divide cell into two or more cells.  
 ii) Merging cells : In excel merging cell means to merge two or more cells into one cell.
7. Watermark is a text/symbol display in light color in the background of a document. It also help to show ownership/authorization.
- ★ Steps to apply watermark are :
- i) Open the document to which watermark is to be applied.
  - ii) Click on design tab.
  - iii) Click on arrowhead of watermark button.
  - iv) Select the desired watermark. The selected watermark is applied.
8. Macro is a small program. It consists a to set of commands recorded automatically.
- ★ Steps to create Macro :
- i) Click on view tab.
  - ii) Click on arrow head Macros button. A drop down menu is displayed.
  - iii) Selected Reword Macro option.
  - iv) Type the Macro name in Macro home box. Click on keyword button.
  - v) Type the shortcut key in press new short cut key box. This name is generally Alt + some alphabet.
  - vi) Click on Assign button and then close button.
  - vii) Perform a set of actions to insert a picture.
  - viii) In view tab, Click on arrow head of Macro buttons. A drop down menu is displayed.
  - ix) Click on stop rewording option in the displayed drop down menu.
  - x) The set of actions performed is reworded in the mentioned short-key.
  - xi) To perform same set of action again, just press above short cut key.

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## Sample Paper - 2

**(A) Choose the right answer :**

1. (b)   2. (b)   3. (c)   4. (a)

**(B) Fill in the blanks:**

- 1. Mailing tab
- 2. .3

3. F8
4. Super

**(C) State whether following statements are T or F:**

1. (F)
2. (T)
3. (F)
4. (F)

**(D) Answer the following:**

1. i) Main Document : It contains the general text we want to send to many recipients. It remains the same for all the recipients called as letter body.  
ii) Data Source : It contains the mailing list i.e name, address etc.. of recipient. It is different for different recipients.  
iii) Merge Field : It is a field used to insert data field such as name from the data source to main document.
2. Steps to insert merge fields :
  - i) Click on Mailing tab.
  - ii) From write & Insert fields groups, click on Insert merge field button. A drop-down menu is displayed showing the created fields name.
  - iii) Move cursor to the position in the main document where you want to insert Merge fields.
  - iv) From the drop down menu, click on field name that is to be inserted.
  - v) Repeat step 3 or 4 for other fields.
3. Step to rename a worksheet :
  - i) Right - click on the name (available in status bar) want to rename. A pop-up menu is displayed
  - ii) Click on rename option in the menu. Worksheet name is highlighted.
  - iii) Type the new name. Name of worksheet is changed to the typed new name.
4. Steps to open existing workbook :
  - i) Click on file tab.
  - ii) Click on open option from the menu. Open window is displayed.
  - iii) Select the drive and folder name containing the desired file.
  - iv) In file name box, enter the name of the workbook.
  - v) Click on open button, desired workbook is opened.
5. Auto fill in excel provides facility to automatically fill a standard series of data (such as number or text) by entering just first 2 terms of series.
6. Steps to change Row Height in Excel :

- i) Select the block of rows whose height is to be changed.
  - ii) Click on Home tab.
  - iii) Click on arrow button of format button in cells group tab.
  - iv) Click on Row Height option in the drop down menu. Row Height dialog box displayed
  - v) Enter the desired row height in Row height box.
  - vi) Click on OK button to confirm the selections mad.
7. Three types of AI are :
- i) Weak AI : It focuses on one task and cannot perform beyond its limitation.
  - ii) Strong AI : It focuses on understanding and learning any intellectual task that a human can do.
  - iii) Super AI : It focuses on surpassing human intelligence to perform a task better than human.
8. Four characteristics of AI are :
- i) Symbolic Processing ; In AI application, computers process symbols rather than number or letters.
  - ii) Ability to Learn : Unlike tradational programs, AI programs have an ability to learn.
  - iii) Fast Decision Making : AI has the ability to help in fast decision making. Most in novative organizations rely on AI algorithms for their fast decision making process.
  - iv) Reasoning : Is the ability to solve problems through logical deduction.

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## Sample Paper - 3

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**(A) Choose the correct one :**

1. (b)   2. (c)   3. (b)   4. (c)

**(B) Fill in the blanks:**

1. Reinforcement
2. Open - source
3. Character set
4. Non - executable

**(C) State whether following statements are T or F:**

1. (T)   2. (F)   3. (F)   4. (T)

**(D) Answer the following:**

1. i) Machine Learning is an application of artificial intelligence that enables computer into a modes of self - learning, predication and in proving itself on the basis of Input

data without being programmed explicitly.

ii) Supervised Learning : In this type of learning. Computer is trained under the guidance of some trainer/teacher by providing sample inputs and their outputs.

2. There are some major challenges in the field of machine learning.

i) Quality of Data : ML requires good quality unbiased data. This is time consuming and expensive.

ii) Lack of Experts : ML is still in its childhood so availability of experts resources is a tough job.

iii) Difficulty in Implementation : Due to its complexity, it is quite difficult to implement it in real life.

3. Advantages of machine Learning are :

i) Automation : With ML, you need not to intervene your project at every step. It enables machine to learn, make predictions at its own.

ii) Continuous Improvement : As ML algorithms gain experience, they keep improving in accuracy & efficiency which results in better decisions.

iii) Wide Applications : ML can serve wide range of applications whether it is healthcare or natural language processing or auto driving.

iv) Multi - dimensional : ML are good at handling multi - dimensional and multi - variety data.

4. Features of Python :

i) It is quite easy to learn as it has few keywords, simple structure and clearly define Syntax.

ii) It is free i.e it can be downloaded without any charges.

iii) It provides large number of library functions.

iv) It is dynamically typed language i.e you need not to declare the type of variable in advance.

v) It is open - source language.

5. Interactive Mode

- i) It is used when an user wants to run one single line.
- ii) It produces output that can be displayed on the screen and then disappears.

Script Mode

It is used when the user is working with more than one single line.  
It produces output that can be saved and reused.

6. i) Character Set : of language is a set of valid symbols acceptable in that language.  
It can be classified into 5 parts.
- ii) Identifiers : is a name assigned to a variable or function or class for the identification.
7. a) Key words : Is also know as reserve word in a programming language that has a predefined (i.e already defined) meaning in the language and can not be changed.
- b) Comments in Python : It is a non - executable statements i.e it is not excuted and is just ignored by Python Interpreter. To make a statement as comment in Python, a has h # sign is placed just at the begining of the statement.
8. I = In+ (Input ( "Enter length = " ))  
W = In+ (Input ( "Enter width = " ))  
Area = I \* W  
Print ( "Rectangle area = area " )

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## NATIONAL CYBER OLYMPIAD

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- |   |         |
|---|---------|
| 1. (d)                                    | 16. (b) |
| 2. a - (i), b - (iii), c - (ii), d - (iv) | 17. (c) |
| 3. (b)                                    | 18. (c) |
| 4. (d)                                    | 19. (c) |
| 5. (b)                                    | 20. (a) |
| 6. (b)                                    | 21. (a) |
| 7. (d)                                    | 22. (a) |
| 8. (a)                                    | 23. (b) |
| 9. (a)                                    | 24. (d) |
| 10. (a)                                   | 25. (c) |
| 11. (a)                                   | 26. (b) |
| 12. (c)                                   | 27. (a) |
| 13. (c)                                   | 28. (d) |
| 14. (b)                                   | 29. (c) |
| 15. (c)                                   | 30. (a) |
|   | 31. (b) |