Computer Application Question Bank

Class 8
1ˢᵗ TERM

Chapter 1:- Operating System and Graphical User interface

A. Fill in the blanks:
1. **Hardware** refers to the physical parts of a computer that you can see and touch.
2. **Software** refers to the instruction or programs that tell the hardware what to do.
3. **Application** software is a set of programs designed to perform specific type of job.
4. **Distributed** operating system runs on computers which are located in different geographical areas, interconnected through a network.
5. A **command line** is a space on the display screen in which commands are typed in by the user.

B. State true or false:
1. Computers work with an interaction of hardware and software. **True**
2. Application software is a collection of one or more programs that controls manages the overall operation and performance of a computer system. **True**
3. Operating system acts as a central coordinator between the user and the software. **True**
4. Multithreading operating system allows more than one user to use the same computer at the same time or at different times. **False**
5. CUI requires the user to type commands in order to interact with the computer system. **True**

C. Multiple Choice Question:
1. A computer interprets the instructions given by a user with the help of an **operating system**.
2. The ability to perform more than one task together at one time is called **multi tasking**.
3. **RTOS** has the capability to priorities the processes, minimize the execution time and work independently with no interdependencies.
4. Character user interface is also known as **command line** interface.
5. **GUI** requires more RAM to run.

D. Application Based Questions:
1. While conducting a lecture on the types of operating system, Mohit's instructor asked him to name an operating system that is used when the time span required to react to an input is rigid and time bound. Can you help Mohit in answering the question? **RTOS**
2. In a quiz competition, the quiz master asked one of the participants, Nyra, "In which user interface, the user mostly gets immediate visual feedback of the action he performs? "To this Nyra replied "CUI"? Is she right? **NO**. If not, what is the right answer? **GUI**

E. Answer the following:
1. Define hardware and software.
   Ans. **Hardware: -** It refers to the physical parts of the computer that we can see and touch.

   Software: - It refers to the instructions or programs, which tell a hardware what to do.
2. What is System software? Into how many types or categories can it be classified?

Ans. It is a collection of one or more programs that controls and manages the overall operation and performance of a computer system. It acts as an interface between the user and the computer and also provides a platform for running Application software.

System software is classified into the following types: -

i. Operating System
ii. Language Processor
iii. Device Drivers
iv. Utility Software

3. Explain why we need an Operating system.

Ans. An operating system encompasses all operations, such as:

➢ What to do?
➢ When to do?
➢ How to do?

It fills the communication gap between the hardware and a user.

4. Explain any three functions of an Operating system.

Ans. The following are the functions of an operating system: -

i. Processor Management
ii. Memory Storage and Management
iii. File Management

5. What are the advantages of GUI over CUI?

Ans.

GUI	CUI
GUI interface is much attractive and appealing.	CUI interface is relatively less appealing.
GUI is easier to learn and more user-friendly due to the presence of various graphical elements, like icons, menu, buttons, etc.	CUI is a text-based interface and hence is not as user-friendly as GUI.

6. Write short notes on the following:

i. Multi-User Operating System: - Multi-user operating system allows more than one user to use the same computer at the same time or at different places. Some Operating Systems, which fall under this category, are: Window 2000, Windows NT, Windows XP, Windows Vista, Windows 7, Windows 8, etc.

ii. Multi-Threading Operating System: - These operating systems allow different parts of a software program to run simultaneously. The feature of multi-threading can delay the execution response of certain processes.

iii. RTOS (Real-Time Operating System: - RTOS is designed to handle real time scenarios and problems. Such operating systems have the capability to prioritize the processes , minimize execution time, and work indepently with no interdependencies.

iv. Distributed Operating System:- Distributed operating system runs on a set of computers that are located in different geographical areas interconnected by a network. It allows all the linked machines to access data and software.

F. **Inside Question**:

1. **BIOS:** - It stands for Basic Input Output System. It is a software stored on a small memory chip on the motherboard which instructs the computer, how to perform basic functions, such as booting, configuring the hardware etc. It also manages data flow between the OS and the attached devices.
2. **Single User OS:** - Single user OS was the initial version of the OS that allowed only one user to work with the computer at a time. Example: - Win3.1, Win95
3. **Multi processor OS:** - A multi-processor system consists of several processors that share a common physical memory. In this system, all processors operate under single operating system. It provides higher computing power and speed that allows user to run and work in multiple applications at the same time.
4. **Multi tasking OS:** - The ability to perform more than one task together at one time is called multi-tasking. An operating system which is capable of doing multiple task or processes while using common processing resource, ie, using only one CPU is called a Multi tasking OS.

Chapter 2:- Spreadsheet – Formulas and Function

A. Fill in the blanks:
1. Formulas are used to perform **calculations**.
2. The cell address in a formula is also called **cell reference**.
3. The cell address in a formula that does not change on copying is considered as **absolute reference**.
4. **Arguments** are input to functions, which accept values as number or text.
5. The **& character** is used for concatenation of strings.

B. State true or false:
1. Formulas must begin with the question mark (?). **False**
2. In absolute referencing, the relative position of rows and columns changes where you copy a formula. **False**
3. In absolute referencing, '$' sign is used before the cell co-ordinates. **True**
4. A range can be used in a formula. **True**
5. The error #VALUE occurs if the number is divided by a zero. **False**

C. Application based questions:
1. A sports teacher has measured the height of the students in a class. Soumya has been given the assignment to find the maximum and minimum height from the collected data. Suggest the function, which she should use to accomplish the task. **Use mathematical function Max () and Min().**
2. Ms Priya and her friends got a raise of 10% in their salaries. Find the total amount if their present salary is Rs.15000. Calculate the salary by using the formula. **Salary+Salary*10/100.**

D. Multiple choice question:
1. To use the sheet reference, which address is appropriate? **Sheet 1!D4**
2. Which key combination is used to get the sum of the values of adjacent cells? **Alt + =**
3. Which function finds the largest number in a range? **MAX ()**
4. Which of the given cell reference can be used in a relative reference? **A3**
5. Which function is used to count the number of numeric values in a range? **COUNT ()**

E. Answer the following:

1. What is a Formula? Explain with the help of an example.
   Ans. Formulas are the user defined instructions to perform calculations. For example, if we need to find average of two numbers, then we first add the two numbers and then divide by 2.
   Syntax: - =**B2+B3/ 2** .
2. What is Cell Reference? Mention its types.
   Ans. The cell address that we use in formulas is known as cell reference. They are of three types: -
   i. Relative Reference
   ii.Absolute Reference
   iii.   Mixed Reference
3. What do you know about Absolute reference? Explain with an example.
   Ans. Absolute reference is used when we do not want to change the address of the cell while copying the formula to another cell. To use absolute reference in a cell, you need to add dollar sign ($) before the column and row number. For example**=$A$1+$A$2.**
4. Explain circular reference with an example.
     Ans. A circular reference occurs when a formula in a cell refers to its own cell value directly or indirectly.
5. What do you mean by a Function? Name some of the Functions.
   Ans.   Functions are the pre-defined or in-built formulas in Excel to perform both simple and complex calculations. They save time and eliminate the chance to wrong formulas.
   Some examples: MAX(), MIN(), SUM()
6. What are the rules to enter a function?
   All excel functions must begin with = sign. Function name must be valid excel name. Function name must be followed by an opening and closing parenthesis. Arguments are enclosed in the parenthesis.

Inside Question
1. What is relative referencing?
   Cell reference refers to the cell addresses used in a formula. In relative cell reference, when a formula is copied to a new location, the cell addresses used in it change based on the location of the destination cells relative to that of the source cell.
2. Explain mixed referencing with an example.
    A combination of relative and absolute reference is referred to as mixed reference.
   Example: =B4+$C$4
3. What is a range?
   A range is a group of contiguous cells, which form the shape of a rectangle. You can specify a range by writing the starting cell address followed by the ending cell address separated by a colon.

Chapter 3:-Charts in Excel
A. Fill in the blanks:
   1. F11 function key is used to insert a chart instantly in a worksheet
   2. The mini charts that fit into a single worksheet cell to provide the visual representation of the data are known as sparklines.
   3. Legend depicts the colours, patterns and symbols assigned to the data series.

4. <u>Radar</u> chart looks similar to a spider net.
5. <u>Chart title</u> describes the aim and contents of the chart.

B. State true or false:
1. A chart is a textual representation of data in a worksheet. **False**
2. Area chart displays data in the form of long rectangular rods also called bars. **True**
3. Line chart is in the form of lines and is used to illustrate trends in data at equal intervals. **True**
4. Scatter charts is the default chart type in excel. **False**
5. Stock chart has been designed specifically for plotting data related to stock and shares. **True**

C. Application based question:
1. Ritu is a student of class VII. Her geography teacher has asked her to prepare a chart on the population of four Metro cities of India. Suggest her the chart type that suits her project. **BAR chart**
2. Tripti has created a chart. She wants to improve the appearance of her chart by changing the background colour of its plot area. Which option will you suggest her to perform this task? **Changing the plot area background**

D. Multiple choice question:
1. What type of chart is used to emphasize the magnitude of change over time? **Area**
2. **Stock** chart is designed specifically for plotting data values related to stocks and shares.
3. What is the other name for the horizontal axis of chart? **Category axis**
4. Which type of chart is used for representing huge amount of data? **Line**
5. What is the other name for XY chart? **Scatter**

E. Answer the following:
1. What is chart? Ans: A chart is a graphical representation of data in a worksheet. It is an effective way to display data in a pictorial form. Chart makes it easier to draw comparison and see growth and relationship among the values and trends in data.
2. How is a column chart different from bar chart? Ans:

Column chart	Bar chart
Used for displaying data that shows different trends over a period of time.	Illustrates the data comparison between individual items.
It is the default chart type in MS Excel.	It displays data in the form of long rectangular rods placed vertically or horizontally.

3. Explain different components of a chart.
   i. Chart Area: - includes all the area and objects in the chart.
   ii. Data series: - are the bars, slices or other elements that show the data values.
   iii. Plot area: - is a window within the chart area.
   iv. Legends: - it depicts the colour, patterns or symbols assigned to the data series.
   v. Chart title: - describes the aim and contents of the chart.
4. What is a Pie chart? Describe its features.
   Ans. This chart displays data in the form of a circle that is divided into a series of segments. These segments show the relative size of each item in the chart. It always

shows only one data series and is useful when you want to emphasize on a significant element.

5. Differentiate between Category axis and Value axis.

Category Axis	Value Axis
Category axis or X axis is the horizontal axis of a chart.	Value axis or Y axis is the vertical axis used to plot the values. It is located at the left side.

6. Explain the process of resizing a chart.

Ans. To resize the chart, position the mouse pointer on any of the corner border of the chart. You will observe that the changes to a double-headed arrow. Now drag the handle in the desired direction to change the size accordingly.

7. How can a chart be moved to another location?

Ans. To move a chart, place the mouse pointer on the Chart area. A four-headed arrow appears, press and drag it in order to move the chart in any direction. Release the mouse button to place it at the desired location.

Inside Questions:

1. What is line chart? Ans: It is in the form of lines and is used to illustrate trends in data at equal intervals. It is generally used to represent a huge amount of data.
2. What is area chart? Ans: It is a unique version of line or column graph. It has a greater visual impact than a line chart. It emphasizes on the magnitude or volume of change over time.
3. What is scatter chart? Ans: It has always two value axes. One set of numerical data is displayed along the horizontal axis and another set represented by the vertical axis.
4. What is Doughnut chart? Ans: It displays data as sections of circles. It can have more than one data series. Each data series adds a ring to the chart and the chart is represented in the form of concentric circles.
5. What is radar chart? Ans: It looks similar to a spider net. It displays data values plotted as points which are connected by lines to form a grid. It compares the aggregate values of several data series.
6. What is stock chart? Ans: It is a type of column graph, which has been designed specifically for plotting data values related to stocks and shares or fluctuation of daily or annual temperature.
7. What is bubble chart? Ans: In this chart, data is arranged in columns on a worksheet in such a way that X values are listed in the first column and corresponding Y and Z values are listed in adjacent columns.
8. What is surface chart? Ans: Data that is arranged in columns or rows on a worksheet can be plotted on a surface chart. It is useful to find optimum combinations between two sets of data.

Chapter – 8: Networks

A. Fill in the blanks:
1. Transmission medium is the physical path through which message travels from the sender to the receiver.
2. Bluetooth is a communication technology that uses low power radio waves to connect electronic devices wirelessly.
3. A PAN is a computer network that covers a small area of about 10 meters.
4. A hyperlink is an image, audio, video, graphics or text that connects one web page to another web page.

5. An IP address is a <u>32 bit</u> address containing as set of four numbers, which varies from 0 to 255.
6. The set of rules that determines how data should be transferred over networks, compressed and presented on the screen is called <u>protocol</u>.

B. State true or false:
1. A crossover Ethernet cable has got both its ends identical to each other. **False**
2. Infrared technology can connect only two devices at a time. **True**
3. Wi-Fi stands for wireless filtering. **False**
4. CAN covers an area smaller than MAN. **True**
5. ISP provides Internet connection to the users free of cost. **False**

C. Application based questions:
1. Riya wants to transfer pictures of her recent US trip from her mobile to her computer. Suggest a wireless mode of transmission which she can use for the same. **Bluetooth**
2. Mr. Nanda is opening a new branch of his office in Noida. He wants to connect the computers of this branch with the computers of his home branch at Panchkula. Which networking type best suits his requirement? **WAN**
3. Which type of network will you recommend in a school for data and hardware sharing? **LAN**.

D. Multiple choice question:
1. Hypertext appears with an underline and is usually in **<u>Blue</u>** colour.
2. Which networking device used to connect multiple computers and computing devices directly to the network using cables? **HUB**
3. A **<u>MODEM</u>** converts digital signal to analog signals and vice versa.
4. Cable television is an example of **<u>Metropolitan area</u>** network.
5. Which one of the following modes of transmission requires the devices to be in a direct line of sight with each other? **Infrared**

E. Answer the following:
1. What is computer network?
   Ans. A computer network can be defined as a group of computers and other peripheral devices that are linked together for the purpose of sharing data and hardware resources.
2. What is the role of transmission medium in a computer network?
   It is the physical path through which the message travels from the sender to the receiver.
3. Write any two advantages of networking.
   i. Efficient use of storage media.
   ii. Reduction in hardware costs.
   iii. Quickest document delivery.
4. What is coaxial cable?
   A coaxial cable consists of central copper wire surrounded by insulation and then a shield of braided wire. It is relatively inexpensive and can transmit data at higher rates.

Baseband coaxial cable	Broadband coaxial cable
It supports quick transmission of a single	It transmits multiple signals at the same

signal at a time. It is mainly used for LANs.	time and is used for longer distances.

5. Differentiate between the Bluetooth and infrared wireless technology

Bluetooth	**Infrared Wireless**
Bluetooth is a communication technology that uses low power radio waves to connect electronic devices wirelessly.	It is a short range communication technology that covers approximately 5 meters of distance. It can take place between two devices at a time.

6. What is the utility of domain name? Explain with example.

   Domain name is a unique name given to each website or resource connected to the Internet. Domain names are easier to remember than IP addresses since name has strong correlation with the website. For example, to use the Google search engine, the domain name is google.co.in

7. What is the role of a Gateway in Computer Networks?

   Gateway is a network point that acts as an entrance to another network using different protocols. It is a shared connection between a local area network and a WAN.

8. Write notes on:
     i. Wi-Fi: stands for wireless fidelity. It creates a wireless Local area network that uses radio waves to send the information. The devices require a wireless adapter connected to them to capture the wi-fi signals.
     ii. Modem: stands for modulation and demodulation. It converts digital signal to analog signals and vice versa. Modems are available in two categories, internal and external.
     iii. CAN: stands for cluster area network. Also know as campus area network. It is comprises of series of small LANs over a small geographical area.

9. Differentiate the following:

Hub	**Switch**
A hub is a networking device that is used to connect multiple computers and computing devices directly to the network by using cables	A switch is aware of the addresses assigned to each of its ports and sends the incoming data it receives only to correct port.

Router	**Repeater**
A router is communication device that is used to connect two different networks. It controls the traffic and keeps the network efficient.	A repeater is a communication device used to regenerate a signal. It receives electronic signals, cleans theam and retransmits them.

Inside questions:

1. What is the full form of www? What is its function?

Ans. www stands for world wide web. It is a collection of documents known as web pages which are written in Hypertext Markup Language.

2. What is protocol?

Ans. The set of rules that govern the procedure of communications between computers in a network are referred to as protocols.

3. Write the full form of NIC and ISP.

Ans. NIC stands for Network Interface Card and ISP stands for Internet Service Provider.

4. Differentiate between a webpage and a website.

Ans. A webpage is a document available on the world wide web through internet. It is written in HTML.

A website is a collection of web-pages hosted on a web server and is accessible to all users of internet throughout the world.

5. Discuss the role of TCP/IP in the working of internet.

Ans. TCP stands for Transmission Control Protocol. It is responsible for creating the packets at the point of sending and rearranging them in correct order at the receiving end. IP stands for Internet Protocol. It is responsible for delivering messages to the proper addresses on internet.

6. Explain the term client and server.

Ans. Server is a computer that is more powerful than all other computers connected to the network. Clients are other computers that are connected to the network which runs programs from and access the data stored in the server.

7. Distinguish between internet and intranet.

Ans. Internet is a network with unlimited number of computers and users to use abundant information from all over the world. Internet contains intranets. Whereas intranet is a smaller network accessible by a specific group of people belonging to an organization and allowing them to use information related to the people of the group or organization only. Intranet is a subset of internet.

8. What is web server?

Ans. A web server is a powerful computer which contains the programs that can be provided to the web clients or web users.

Chapter 9: Cloud computing

A. Fill in the blanks:
1. A hybrid cloud is a combination of both private and public cloud.
2. Microsoft renamed Skydrive as onedrive on January 27, 2014
3. Onedrive is available as a built-in app on windows 10.
4. Skype is already integrated in Onedrive and can be accessed directly from it.
5. Picasa is free program from Google that is used to organize, edit and share the digital photographs online.

B. State true or false:
1. A private cloud is provisioned for open use by the general public. **False**
2. In cloud computing, a consumer has to pay a fixed amount even if the cloud services are not being used. **False**
3. Cloud computing provides a reliable recovery mechanism to deal with failures. **True**
4. By default, onedrive displays the files and folders in the form of thumbnails. **False**
5. Onedrive allows multiple people to work together on the same document at the same time.**True**
6. Picasa is used to edit photos by making changes in their original copies.**False**

C. Application based questions

1. Sonali's instructor has explained her about one of the features of cloud computing which allows the consumers to transparently scale up or scale down the resources according to their computing need. Can you guess which feature she is talking about? **Rapid elasticity**
2. Rohan wants to upgrade his storage plan of onedrive. Which button can he make use of to accomplish the task? **Onedrive settings**

D. Multiple choice question:
1. Resources are centralized amongst the various branches of an organization in a **private** cloud
2. Which of the following applications provides storage services on the cloud? **Onedrive**
3. Name the option in onedrive that allows you to share your file through a link. **Get a link**.
4. Which amongst the following is not a characteristic of cloud computing? **Rigidity**
5. Picasa provides **1GB** free online storage space to store photos.

E. Answer in one word:
1. Which characteristics of cloud computing allows multiple consumers to pool the resources available on the cloud? **Resource pooling**
2. Which type of cloud is provisioned for use by a group of consumers from different organizations who share the same concerns? **Community Cloud**
3. Name the onedrive option that allows you to sort your files and folders on the basis of size. **Sort**
4. Can you set the sharing settings for an individual document while sharing a folder in onedrive? **Yes**
5. Which shortcut key combination is used to create a new album in Picasa? **Ctrl + N**

F. Answer the following:
1. What is cloud computing?
Ans: Cloud computing is made up of two words, cloud and computing. Cloud is metaphor for Internet, hence it means computing on the Internet. Thus, cloud computing refers to manipulating, configuring and accessing the applications online.
2. Write two advantages of cloud computing.
   1. Unlimited free storage
   2. Cost saving
3. Write short notes on Picasa.
   Ans: Picasa is a free program from Google that is used to organize, edit and share the digital photographs online. It provides 1GB free online storage space to store photos.
4. How can you upload a file on Onedrive?
   Click the upload button-> select the files or folder option from the displayed list-> locate and select the file or folder you want to upload in the open dialog box then click on the open button-> Onedrive takes few seconds to upload the specified file.
5. Explain the characteristics of cloud computing.
   1. On-demand self-service
   2. Broad network access
   3. Resource pooling
   4. Rapid elasticity
   5. Measured service

Inside Question
1. Write notes on:
    1. Public cloud: - A public cloud is provisioned for open use by the general public. It has no boundaries and the cloud infrastructure can be used by anyone, anywhere over the Internet.
    2. Private cloud: - A private cloud is owned and used by a single organization over a private network. It centralizes the resources of the organization so that they can be accessed easily by its various departmentsand offices at different locations.
    3. Hybrid cloud: - A hybrid cloud is a combination of both private and public cloud. This type of cloud offers benefits of multiple deployment models such as the controlled environment in private clouds and rapid elasticity of public clouds.
    4. Community cloud: - The community cloud is provisioned for use by a group of consumers from different organization who share same concerns. It may be owned, managed and operated by one or more of the organizations in the community or a third party.
    5. OneDrive: - Onedrive is a free online storage facility offered by Microsoft. Here one can store all your photos, videos documents and much more in an organized manner. It is a password protected storage area accessed from anywhere anytime. Microsoft offers 5GB free storage space to all its onedrive users.

2nd TERM

Chapter 4: Algorithm & Flowcharts

A. Fill in the blanks:
1. The step-by-step procedure to solve any problem is called **Algorithm**.
2. **Flow charts** are the pictorial representation of a program.
3. The process of drawing a flowchart for an algorithm is known as **flowcharting**.
4. The algorithm should involve **finite** number of steps to reach a solution.
5. The **decision** box is used for checking or applying any condition in the program.

B. State true or false.
1. A flowchart is not a pictorial representation of steps to get the solution of a problem. **False**
2. Algorithm means a set of rules which specify how to solve a specific problem. **True**
3. Flowcharts are helpful in analyzing the logic of problems. **True**
4. Connectors are used to connect the boxes. **True**
5. The general direction of flow in any flowchart is from bottom to top or from right to left. **False**

C. Multiple choice question:
1. In a flowchart, **flowlines** indicate the sequence of steps and the direction of flow.
2. **Input/Output** is used to accept input and give output of a program.
3. The **start/stop** represents the starting or ending point of a program.
4. **Onpage** connectors are used to join the parts of a flowchart contained within the same page.

D. Answer the following:
1. What is an algorithm? Write any three characteristics of an algorithm.

Ans: The step-by-step procedure to solve any logical and mathematical problem is called an algorithm. The characteristics are : 1 – Generality 2- Definiteness 3 – Uniqueness

2. Define the term flowchart. Write any two advantages of a flowchart.

Ans: A flowchart is a pictorial representation of the steps of an algorithm, used to solve a particular program. The advantages are: 1 – Proper debugging 2- Effective analysis

3. What is use of input/output box?

Ans: It is used for accepting inputs or giving output of the program

4. When do we use the process box?

Ans: It is used for writing the processing instructions and doing calculation

5. What is use of decision box?

Ans: It is used for checking or applying any condition in the program

Inside questions:

a) What is dry run? Ans:- A dry run is a testing process where the user tests the algorithm step by step without actually running it. It is a mental run of the algorithm where the user can test it theoretically.

b) What is programming? Ans:- It is a process to solve problems. It is a process of taking algorithm and encoding it into a programming language, so that it can be executed by a computer.

c) What is debugging? Ans:- It is a process of removing or rectifying errors from the algorithm or program.

Chapter 7: App Development

A. Fill in the blanks
1. **Hybrid apps** combine features both of web apps and native apps.
2. The abbreviation of the word 'application' is **App**.
3. Before installing an app on our device the manufacturer of the app will ask for certain **permissions**.
4. The Facebook app is an example of a **social networking** app.
5. The E-commerce app, that was founded by Sachin Bansal and Binny Bansal, is **Flipkart** app.
6. **Desktop** app do not need web access and run independently on a computer.
7. We can pay utility bills using the **banking** app.

B. State true or false:
1. Google maps is an e-commerce website. **False**
2. SDK stands for software design kit. **False**
3. Hungama music app brings your favourite tunes right to your device. **True**
4. Mobile apps can be preloaded on the smartphones or tablets. **True**
5. For the latest information on the global and Indian markets, install SBI buddy on your mobile device. **False**

C. Application Based Question:
1. Sneha and her parents are planning to go for a movie. She wants to book the tickets online. Which app she can make use of to do the same. **Book my show**
2. Mannat had a school trip last month, where she clicked various photographs. Now she wants to share these photographs with her friends. Which app she can use for it? **Whatsapp**

D. Answer the following:
  A. How can you broadly categorize the apps? Explain any one app.
     Apps can be broadly classified into 3 categories. They are Desktop apps, Web apps, Mobile apps.
     Desktop app:- These apps can be used on a Desktop or Laptop. They do not need web access and run independently on a computer. Example- Word processor, paint etc
  B. What are the requirements for developing an app?
     A good grasp on the Java language is essential. Software development kit, knowledge of XML, HTML, CSS may also be needed for designing an app.
  C. What are the differences between hybrid app and native app.
     Native apps have been developed for a particular platform or they are native to only one type of mobile operating system. It is installed through the app store.
     Hybrid apps are written with the same technology used for web apps and run inside a mobile device like a native app. Hybrid apps are popular as they allow cross platform development.
  D. Distinguish between Desktop app and a mobile app
     Desktop app:- These apps can be used on a Desktop or Laptop. They do not need web access and run independently on a computer. Example- Word processor, paint etc
     Mobile app:- These apps run on a smart phone or a tablet. These apps are usually smaller in size. Mobile apps may come preloaded on the smart phones or tablets.
  E. How can you download and install an app from the Google play store?
     Tap on the play store icon on the screen-> In the search bar, type the name of the app that you wish to download-> it will display the relevant list of apps->select the most suitable app-> tap the install button to install the app on your device
  F. Explain the importance of educational apps.
     Educational apps not only help us to learn new concepts, but also show us what is being taught in the classrooms. Today students in the villages can easily access high quality educational resources. Teachers are able to distribute study material quickly, conduct tests.
  G. With the help of suitable examples explain the photo editing task that can be done using desktop, web or mobile app.

Desktop App	Web app	Mobile app
Photoshop from Adobe is a photo editing software, which must be installed on a desktop or laptop	Pixir also provides photo editing software as a web application	Adobe photoshop express and mobile pixir are photo editing apps for mobile devices.

Inside questions:
  a) What is app? Ans:- The utilities which are available with the mobile or smart phones are called as apps. The 'app' is mostly used to refer to the software that runs on mobile phones.
  b) What is tablet? Ans:- A tablet or tab is a small wireless mobile computing device, which can serve the purpose of a PC as well as a smartphone.
  c) What are Web Apps? Ans:- Web apps are stored on a remote server and are used through internet. They are run by a browser. Users can avail a web app as a web page.

Chapter 5: Introduction to Java & BlueJ

A. Fill in the blanks:
1. The java programming language is an **object oriented programming** language.
2. **Encapsulation** is the technique of binding both data and functions together.
3. A **class** is a blueprint that defines data and functions common to all objects of a certain kind.
4. The smallest meaningful element of a java program is called a **token**.
5. **Initialization** is a process of assigning some initial value to a variable.

B. State true or false;
1. Polymorphism allows a function to behave differently for different objects. **True**
2. Constant means the fixed values that do not change during the execution of a program. **True**
3. The main ( ) function indicates that the execution of the java program will begin from this point. **True**
4. Every java statement must end with colon. **False**
5. Inheritance is a feature using which an object in one class acquires the properties of another class. **True**
6. While comparing two variables, their data type should not be the same. **False**

C. Application based question:
1. Ritika has written a program in java. After the successful compilation of her program, which option should she select to run it? **Right click on the file and select void main option**
2. Kareena is writing a program in java to calculate the average of three subjects. Which operators will she use for the same? **Arithmetic operators**

D. Multiple choice question:
1. A **variable** is a named location in the memory, which stores data temporarily.
2. What does oop mean? **Object Oriented Programming**
3. Which among the following feature is used to manage the complexity of the system? **Abstraction**
4. A java program is compiled into an intermediate language called **bytecode**.
5. The **unary operator** works on a single variable or constant.
6. Which symbol is used to combine two or more items in a single line? **+**

E. Answer the following:
1. Define objects. Give real life examples to explain objects along with their attributes and behavior.
   Objects are real world entities. Objects have two characteristics. They all have state and behavior. Objects are considered as members of a class. Example: A pen as an object has its state such as brand name, colour, price etc. Its behavior is writing.
2. What is class?
   A class represents a group of objects of the same kind. A class may be regarded as a blueprint to create objects. It defines data and functions common to all objects of a certain kind. Once a class defined, any number of objects belonging to that class may be created which shares common state and behavior.

3. What do you understand by the term polymorphism?

The word polymorphism has been derived from the Greek word *polumorphos*, where *polus* means many and *morphe* means shape or form. It means many forms. Polymorphism helps the programmer to use the same function name for more than one purpose.

4. What are operators? Why do we need them?

Operators are special symbols. They are used to perform calculations. Operators are applied to the variables and constants to form an expression

5. What do you understand by the term keyword?

Keywords are the reserved words of a java program with some special meaning. They can be used for specific purpose only. The keywords cannot be used as identifiers. All the keywords are written in lower case letters only.

6. What are variables? How are they different from constants?

A variable is named location in the memory, which stores data temporarily. But a constant mean the fixed values that do not change during the execution of a program. These values can be digits or character constants.

Inside Question:

a) State the characteristics of Java. Ans:- (i) Java is simple, (ii) Java is object oriented, (iii) Java is distributed, (iv) Java is interpreted, (v) Java is robust, (vi) Java is WORA

b) What is package in Java? Ans:- A package is made up of many classes. It is similar to a folder. Package can be defined as an encapsulation mechanism for a group of similar classes.

c) Name the built-in packages of Java. Ans:- java.lang, java.io, java.util, java.awt, java.net, java.applet.

d) What is JVM? Ans:- JVM stands for java virtual machine. It is used to convert byte code into machine code. JVM is different for different platforms.

e) What is JIT? Ans:- JIT stands for just in time compiler. It accelerates the work of JVM. It helps to create (.EXE) executable files.

f) What is JDK? Ans:- JDK stands for Java development kit. It is an IDE (Integrated Development Environment). It has editor, debugger, viewer and compiler. It can run alone without taking any external support.

g) What is BlueJ? Ans:- BlueJ is an API (Application Programming interface). It has editor, viewer and debugger. It takes the help of JDK to execute the program.

h) What is bytecode? Ans:- When the java source code is converted using compiler into an intermediate stage code, then it is known as byte code.

i) What is inheritance? Ans:- Inheritance makes the classes available in hierarchical order and allows the classes to inherit the properties from another class.

j) Define base and derive class. Ans:- A base class is a class from which other classes share or inherits. A derive class is a class which inherits some of the attributes and methods to use.

k) What is message passing? Ans:- When the objects needs to interact with one another, they pass or request information to one another. This interaction is known as message passing.

l) Differentiate compiler and interpreter. Ans:- Compiler reads whole program at a time and then converts it into machine code whereas interpreter reads one line at time and then converts it into machine code.

m) What is token? Ans:- The smallest individual unit in a program is known as token. Java has five types of tokens. 1)Keywords, 2)Identifiers, 3)Literals, 4)Operators, 5)Punctuators.

n) What are separators or punctuators? Ans:- Separators are some special characters which are used as punctuations. In java following are the separators. { } braces, ( ) parentheses, [ ]brackets, semicolon(;), comma(,) and period (.).

o) Write the naming rule of identifiers. Ans:- Identifiers are the names given to any part of the program like variables, objects, classes, methods, arrays etc. a) It may consist of uppercase and lower case alphabets, digits, underscore and dollars sign. b) Identifiers are case sensitive. c) Identifiers can be of any length. d) Identifiers should not start with digits. e) Keywords are not allowed to be used as names for identifier.

p) What is data type? Ans:- Data type decides which type of value to be stored in a variable. There are two types of data types. A) Primitive B) Reference

q) Name the primitive data types. Ans:- boolean, byte, short, char, int, long, float, double.

r) What are operators and operands? Ans:- Operators are the special symbols used to perform a specific operation in an expression. The values or the variables on which the operator performs its task are known as operands.

s) What is Literal? Name its different types. Ans:- Literals are also known as constant whose value remain fixed during the program execution. There are six types of literals. A) Integer, B) Floating, C) Character, D) Boolean,
E) String, F) Null

t) What are non-graphic characters? How are they represented? Ans: Non-graphic characters are those characters which cannot be typed directly from the keyboard. They are represented through escape sequence. Escape sequence are written as backslash (\) followed by one or more characters.

u) What is an expression? Ans:- An expression is any valid combination of operators, constant and variables. It is of two types. A) Pure expression (uses only one data type of operands) and B) mixed expression (uses different data types of operands).

v) What is character set? Ans:- Character set is a well defined characters allowed to use in the programming language. It consists of alphabets, digits and symbols. There are two types of character sets. A) ASCII, B) Unicode

w) Differentiate ASCII and UNICODE. Ans:- ASCII stands for American standard code of information interchange. It consists of 256 characters out of which 128 are English and rest is ISO latin extended characters. It occupies 1 byte of memory. UNICODE stands for universal code. It consists of 65536 characters containing almost world's all languages. It occupies 2 bytes of memory.

x) What is comment? Ans: A comment is a remark statement. It explains various aspect of the code. Comments are non-executable statements. There are three types of comments. A) Single line, B) Multi line c) Documentation.

y) Write naming conventions. Ans:- A) Names of constant should be in all uppercase. B) Class name should begin with capital letter. C) Names of variables and methods should be in lower case. D) When names of variables, methods have more than one word, from second word onwards, it should begin with capital letters.

z) What are operator precedence and operator associativity? Ans:- Operator precedence is a well-defined rule for specifying the order in which the operators in an expression will be evaluated. When two or more operators with same precedence appears in an expression, then the expression is evaluated as per associativity I,e, left to right occurrence of the operator.

Chapter 6: Decision control structure

A.   Fill in the blanks:

1. The **selection** statements cause the program control to be transferred to a specific location depending upon the outcome of the conditional expression.
2. The **<u>step value</u>** determines the increment or decrement of the loop control variable unless the test condition becomes false
3. Java provides **<u>three</u>** basic looping control structure.
4. The for loop is also called an **<u>entry controlled loop</u>**.
5. The **<u>do-while loop</u>** first executes the block statements and then checks the condition.
6. The order in which statements are executed in a running program is called the **<u>flow of control</u>**.

B. State true or false:
1. The break statement takes the flow of control out of the switch statement. **True**
2. To execute the while loop, the condition must be false in the beginning. **False**
3. Default is the first statement of the switch case. **False**
4. While writing programs, the statements should be indented properly for better readability. **True**
5. The number of iteration refers to the number of times the condition is met. **True**

C. Application based program
1. Radhika is writing a program in java to print her name 10 times. Suggest her the appropriate condition for the same.
   for (i=1; i<=10; i++)
   {
           System.out.println("Radhika");
   }
2. Naina has written a program in which she has entered one number. She wants to check whether the entered number is divisible by 2 or not. Suggest her the appropriate condition for the same.
   if (n%2==0)
           System.out. println ("divisible");
   else
           System.out. println ("not divisible");

D. Multiple Choice Question:
1. The **<u>if else</u>** is a logical situation where either of the two actions are to be performed depending on certain condition.
2. Name the expression that is used to initialize a loop variable. **initialization expression**
3. The unusual execution of more than one case at a time is termed as **<u>fall through</u>**.
4. How many times the following body of loop will execute?
   for (a=1; a<=10; a++)
   {
           System.out.println(a);
   }
   ans: **10**

5. How many times the following message will be printed?

```
do
{
      System.out.println("Hello");
}
ch++;
While(ch<=1);
```

Ans: **Error in code**

6. If none of the case matches, the compiler executes the statements written in the **default** case.

7. Which control structure is used when there is a requirement to check multiple condition in a program? **Switch**.

E. Answer the following:

1. Explain the use of if control structure.

The statement containing if is referred to as bi-directional branching because it executes the block of statements depending on the conditional expression. The conditional expression consists of relational and logical operators and must evaluate to either true or false.

2. What are the unique features of for loop?

For loop is used to repeat a particular task for finite number of times. It performs a fixed number of iteration which is specified in a counter variable, which in turn keeps a track of the number of iteration.

3. Explain the switch statement with an example.

The switch statement is used when there is a requirement to check multiple conditions in a program. It provides an easy way to branch to different parts of the code in a program based on the value of an expression.

4. What the importance is of break and default statements in switch?

The break statement takes the flow of control out of the switch statement.

If none of the case matches, the compiler executes the statements written in the default case.

5. Give one difference between while and do-while.

While	**Do-while**
It is entry controlled loop	It is exit controlled loop
It repeats a statement or block of statements while the specified condition remains true	It first executes the block of statements for once and then checks the condition.

Inside Question:

1. What is control variable? Ans: It is a variable, which contains initial value to determine the duration of repetitions.

2. What are compound statements? Ans: A sequence of statements enclosed within a pair or braces are called compound statements.