Dear students, you will be asked questions related to the final written paper of Computer Science which will be of total **50** marks divided into three parts (Part A, Part B and Part C).

1.Part A will carry a total of **12** marks consisting of **4** multiple choice questions, **4** Fill in the blanks and **4** full form questions.

2.Part B will be of total **20** marks consisting of **5** questions of **4** marks each, of which 2 questions will have internal exemption.

3.Part C will be of total **18** marks consisting of **2** questions of **6** marks each, which questions will have internal exemption.

Multiple choice questions:

1. _____ is word processor software.

a. MS Window   b. MS Excel   c. MS PowerPoint   **d. MS Word**

2. To check spelling and grammar _____ key is used.

a. Ctrl+F7   b. Alt+F7   **c. F7**   d. Shift F7

3. _____ option in Word changes the structure and layout of pages.

a. Format   b. Print and Print Preview   **c. Page Setup**   d. Proofing

4. _____ is an electronic spread sheet software used for automated calculations.

a. MS Window   **b. MS Excel**   c. MS PowerPoint   d. MS Word

5. _____refers to changing the font style, size, color, bold, italic, underline and other related parameters.

a. Formatting   b. Alignment   c. Proofing   d. Filtering

6. Which of the following statement is also called as conditional statement?

a. for   b. break   **c. if**   d. while

7. switch-case is similar to _____ statement

a. if else   **b. if else if**   c. break   d. goto

8. Which statement can be used to terminate a case in the switch statement?

a. continue   b. goto   c. if   **d. break**

9. Which of the following is an example of Post Test loop?

a. for   b. while   **c. do while**   d. continue

10. Which of the following is not a jumping statement?

a. while   b. continue   c. goto   d. break

11. A computer _____ is a set of computers that are connected together.

a. Network   b. System   c. Protocol   d. Internet

12. A _____ is basically a multiport repeater.

a. Hub   b. Switch   c. Router   d. Bridge

13. A _____ is a 2-port device.
a. Hub   b. Switch   c. Router   **d. Bridge**

14. Wi-Fi stands for_____

a. Wireless Field   **b. Wireless Fidelity**   c. Wire Fire   d. Wire Fidelity

15. A _____ is a combination of a Bridge and a Router.

a. Switch   b. Bridge   c. Hub   **d. Brouter**

16. Information Technology (IT) is an area under which computers or other physical devices (hardware, software) are used to create, _____, secure and exchange electronic data.

a. Access   **b. process**   c. define   d. save

17. With the introduction of online education services, students can learn from anywhere using the _____

a. Internet   b. electricity   c. 5G Technology   d. email

18. Android operating system is a _____ operating system.

a. Computer   **b. Mobile**   c. Technology   d. Virtual reality

19. Cloud computing is a kind of _____based computing.

a. Big-data   b. IoT   **c. Internet**   d. Bluetooth

20. Who brought the concept of AI?

a) Victor Allis   b) Marvin Minsky   c) Alan Turing   **d) John McCarthy**

21. Which type of AI focuses on single set of abilities &performs a particular task?

a) Super AI   **b) Narrow AI**   c) General AI   d) None of these.

22. Which one of AI type does not have memory for data storage

a) Limited Memory   **b) Reactive machines**   c) Things of Mind   d) Self Awareness

23. The conversion of natural language into computer understandable form

a) Intrusion detection   **b) Machine translation**   c) Identification   d) None of these.

24. The core of the expert system which by applying set of rules and draw the results of the user question is the function of

a) Inference engine   b) Knowledge base   c) User Interface   d) None of these

25. Place where knowledge from the human expert is collected

a) Domain expert   **b) Knowledge Base**   c) User   d) All of these

26. Robots which provides help for analyzing the collected data are

a) Healthcare robots   b) Domestic robots   c) Military robots   **d) Research robots**

27. _____ is the process to convert information into computer readable form.

a) E-learning   b) E-commerce   **c) Digitalization**   d) Net Banking

28. _____ is meant to be online buying and selling of goods.

a) E-commerce   b) Digi Locker   c) Digital Payment   d) None of these

29. Easiest and convenient way for cashless payment is _____.

a) Digitalization   b) Storage   c) Offline   **d) Digital Payment**

30. _____stores only those educational certificates, issued by educational institutes through digital mode.

a) SWAYAM   **b) NAD**   c) MOOCs   d) DigiLocker

31. _____ is a type of e-commerce which involves company and customer.

a) B2B   **b) B2C**   c) C2C   d) None of these

32. The online service of government is called-

a) Public welfare services   b) democracy services   **c) E-governance**   d) internet services

33. G2C Stands for –

a) Government to employee   **b) Government to citizens**

c) Government to business man   d) Government to government

34. The modern form of E-Governance services is:

a) E-Business   b) E-Commerce   c) E-Services   **d)Smart governance**

35. How many digits are there in Aadhar card number?

a) 14   **b) 12**   c) 16   d) 10

36. Which one is the part of information system?

a) Database and procedures   b) network   c) Hardware and software   **d) All of these**

37. _____ tool allows us to select a drawing with a free hand.

a. Fuzzy Selection   **b. Lasso**   c. Text   d. Bucket Fill

38. SHIFT + C is a shortcut for _____

a. To Create Duplicate Image   b. To Delete Layer

c. To Copy of an image   **d. To Crop an Image**

39. Scale option is used to change the _____ of an image.

a. Color   **b. Size**   c. Area   d. All of the above

40. _____ is known as group of sheets looking at each other.

a. Masking   b. Tools   **c. Layers**   d. None of the above

41. _____ helps to make a duplicate copy of the active layer

a. Smudge Tool   b. Dodge Tool   c. Perspective Tool   **d. Duplicate Layer**

42. In order for the computer to play audio files, different _____ are required.

a. Video codecs   **b. Audio Codecs**   c. Both a & b   d. None

43. _____ format is a common audio format that is played extensively on electronic devices.

a. wmv   b. avi   **c. mp3**   d. cda

44. Audio files are stored on the Audio CD in _____ format.

a. flv   b. aac   c. mov   **d. cda**

45. The effect applied between two video-clips is called _____

a. sound   b. video   **c. video transition**   d. photo

46. The process of dividing the video into sections is called _____

a. merging   **b. splitting**   c. compressing   d. decompr

<mark>Fill in the blanks:</mark>

1. **MIN** and **MAX** Functions used to find the minimum and maximum value in a range.

2. Filter option is available in **Data** tab of Excel.

3. If the cursor is placed at the end of the file, then **Backspace** button is pressed to delete the text.

4. Two options of orientations for page setup are **Portrait** And **Landscape**

5. **= (Equals to)** Symbol is used to start any formula (function) in excel calculations.
6. In **Pre-Test** loops, the control conditions are tested before the body of loop

7. In **Post-Test** loops, the control conditions are tested after the body of loop

8. **continue** statement is used to skip some statements inside the loop
9. **Switch case** is a multi-way conditional control statement

10. The break statement can be used to terminate a case in the **switch** statement.
11. There are total **7** layers in the OSI Model

12. **Network** layer of OSI model manges device addressing.

13. In **Guided** media, data is transmitted using cables.

14. Bluetooth is an example of **Unguided** media.

15. In **Simplex** communication mode, data communication is unidirectional.
16. **WiFi** is a technology that uses radio waves for wire-less high speed internet and

network-coinnections.

17. **Virtual Reality** means experiencing things through our computer that do not really exists.

18. M.Commerce is also known as **Mobile** Commerce

19. **Cloud** storage is a way of saving digital things online.

20. Artificial Intelligence is divided into two types **Type-1** and **Type-2**

21. **Deep Blue** is a chess playing computer developed by IBM.

22. **Apple Siri** is a good example of narrow artificial intelligence.

23. **Reactive** machine have no memory.

24. MYCIN and **Dyndral** are examples of earlier expert systems.

25. **Fourth** Generation Robots are smart as humans.
26. The services and facilities of E-governance is divided into **three** parts.

27. **Aadhar number** gives a unique identity to Indian citizens.

28. In Punjab at village level **Sewa/Suvidha Centers** Gives E-Governance services.

29. **Expert System** is used to solve difficult problems.

30. Smart cards are symbol of **Smart Governance**

31. To resize the layer **Scale** tool is used.

32. To move the layers **Move** tool is used.

33. The quality of the picture decreases when the picture is **Scaled**

34. An important part of the Image Window is **Canvas** where the picture is shown.

Write Shortcut Keys

1. For copying contents	**Ctrl+C**	9. For Printing	**Ctrl+P**
2. For Paste	**Ctrl+V**	10. For Spelling and Grammar Check	**F7**
3. For Bold	**Ctrl+B**	11. For Creating a New File	**Ctrl+N**
4. For Underline	**Ctrl+U**	12. For Opening a File	**Ctrl+O**
5. For Center Alignment	**Ctrl+E**	13. For Creating duplicate Image	**Ctrl+D**
6. For Justify Alignment	**Ctrl+J**	14. For Viewing Image Properties	**Alt+Enter**
7. For Double Line Spacing	**Ctrl+Shift+D**	15. For Cropping the Image	**Shift+C**
8. For Replace	**Ctrl+H**	16. For Merging Layers	**Ctrl+M**

True/False:

1. Writing if statement with-in another if is called Nested Loop. **False**
2. Control statements in C programming are used for altering the normal flow of a program. **True**
3. continue statement is sometimes desirable to skip some statements inside the loop? **True**
4. Looping statements provide a way to repeat commands? **True**
5. The process of making a movie is divided into five stages. **False**
6. Video editing works with only one video clip. **False**
7. Merging a video means splitting the clip into several parts. **False**
8. It is advisable to save the project before starting the process of exporting video file. **True**
9. MPEG-4 video format uses different compression for audio and video tracks. **True**

UTP	**Unshielded Twisted Pair**	UIDAI	**Unique Identification Authority of India**
FTP	**File Transfer Protocol**	G2G	**Government to Government**
SMTP	**Simple Mail Transfer Protocol**	G2E	**Government to Employee**
POP	**Post Office Protocol**	MIS	**Management Information System**
HTTP	**HyperText Transfer Protocol**	DSS	**Decision Support Syst**
MAC	**Media Access Control**	B2B	**Business to Business**
Wi-Fi	**Wireless Fidelity**	B2C	**Business to Consumer**
VR	**Virtual reality**	C2C	**Consumer to Consumer or Customer to Customer**
IoT	**Internet of Things**	NAD	**National Academic Depository**
IT	**Information Technology**	UPI	**Unified Payment Interface**
GPS	**Global Positioning System**	MP4	**Moving Picture Experts Group-4**
AI	**Artificial Intellig**	WMV	**Windows Media Video**
GAI	**General Artificial Intelligence**	FLV	**Flash Video**
NLP	**Natural Language Processing**	AVI	**Audio Video Interleaved**
SAI	**Strong Artificial Intelligence**		

4 Marks Questions:

1 What is Excel?

Ans: Microsoft Excel is a powerful electronic spread sheet program. Usually, we can use it to automate accounting work, organizing data, and for performing a wide variety of tasks. We can use it to prepare results, doing mathematical calculations and representing data in pictorial form with the help of charts.

2 Explain formatting in details?
Ans: Formatting refers to changing the font style, for example: increasing or decreasing the font size, performing bold, italic and underline operation on text. We can change the appearance of text and graphics with the help of formatting options. Text Formatting options are available on the Home tab in MS Word/Excel/PowerPoint.

3 Explain Print & Print Preview options.

Ans: Print preview is a feature that displays on the screen what a hard copy would look like when printed. When we click the Print option in File menu, it automatically will show the preview of our document. It means Print Preview option is used to preview our document on the screen before getting its hard copy while Print command is used to get the hardcopy of our document by printing it on the paper.

4 What are formulas in MS Excel?

Ans: In MS Excel, Formulas are used to perform different types of calculations. Formulas can be used to perform different types of calculation for preparing results and fee related data. In Excel, a formula always begins with equals to (=) symbol. Usually, we use cell references in formulas along with the operators to perform calculations. Some of the examples of formulas are:

=D15+D18+D21
=(B16+C16)*1.07

5 What do you know about the formula bar in Excel?

Ans: Formula Bar is one of the most important components of MS Excel. The Formula Bar is available at the top of the Excel window, just below the ribbon area. The Formula Bar has two parts: left and right side. Left side is Name Box which shows the name or address of current selection while right side shows the contents of the currently selected cell.

6 What are Margins?

Ans: A margin is the space between the contents and the edge of our document. We can set the margins at all the sides (Top, Bottom, Left, Right) of the page. By default, a new document's margins are set to Normal, which means it has a one-inch space between the contents and each edge.

7 Define Branching? Name its different control statements?

Ans: Those control statements which are used for decision making purpose or for making multi-way selection in the program are called Branching Statements.Branching statements are of the following two types:
1.Conditional Control Statements (if else)
2.Multiway Conditional Control Statement (switch case)

8 What is looping? Name three different types of looping statements?

Ans: Those control statements which are used to repeat a set of statements in the program are called looping statements.Following three looping statements are used in the C programming:

1.for loop
2.while loop
3.do while loop

9 What is nested if statement? Write its syntax?

Ans: When one if statement is used within another if statement, it is known as nested if statement.
Syntax of nested if statement if given following:

```
if (test_condition_1)
{
if (test_condition_2)
{
statements;
}
}
```

10 What is if-else statement? Write a program of if-else statement?

Ans: if else statement is a branching statement. It is used for decision making purpose in the C programs. Following program shows the usage of if else statement:

```
#include<stdio.h>
void main()
{
int marks=45;
if(marks>=35)
printf("Pass");
else
printf("Fail");
}
```

11 What is while statement? Write its syntax?

Ans: while statement is a looping statement. It is used for repeating set of statements in the program. It is a type of pre-test loop in which test condition is tested before the execution of body of the loop. Following is the syntax of the while statement:

```
while (test_condition)
{
statements;
}
```

12 What is Information Technology?
Ans: Information technology is a technology in which computers or other devices are used to create, process, store and exchange electronic data. Information technology is such a field of any organization or business that does all the operations related to computers and technology.

13 Give name of any four current trends in Information Technology.

Ans: Following are the names of current major trends in information technology:

1. WiFi technology
2. Bluetooth technology
3. E-commerce
4. GPS technology
5. Android technology
6. Internet of Things (IoT)

14 Define Bluetooth Technology.

Ans: Bluetooth is a type of radio communication technology that allows all types of media files to be sent or received wirelessly. It enables short-distance wireless networking between phones, computers and other devices. The process used to connect two Bluetooth devices is called "pairing".

15 Define GPS Technology.

Ans: The full name of GPS is Global Positioning System. GPS is available in every smartphone today. GPS is used to find the geographical location of any place. It is a global navigation satellite system. We can use it to find the distance or route between two places.

16 Define Multimedia Technology.

Ans: It includes all the techniques that help us to create or display multimedia content. Images, audio, video, text and animation are important elements of any multimedia content. Special types of multimedia management software are used to create multimedia content.
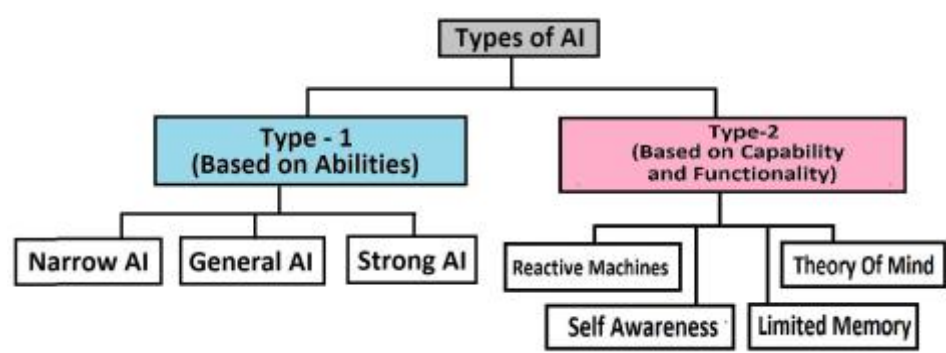
17 Define 5G technology.

Ans: 5G technology means 5th generation technology. 5G is the next generation of wireless technology. This technology is much better than 2G, 3G and 4G technologies. The 5G technology based mobile networks will connect people as well as connect and control machines and devices. In 5G technology, the speed of internet can be 100 times faster than 4G technology. Its internet speed will be more than 20 Gbps so that large amount of data can be easily downloaded and uploaded within a very short time span.

18 What is artificial intelligence?

Ans: Artificial Intelligence (AI) means the artificial development of intellectual ability. AI is a branch of computer science that enables machines to work as intelligently as humans. Artificial intelligence develops smart machines to make human life easier and more comfortable. Some examples of Artificial Intelligence (AI) are: robots, smart cars, drone systems, Alexa, etc.

19 What are the types and subtypes of AI? Depict them with the help of diagram.

Ans: The following diagram shows types and subtypes of Artificial Intelligence:

20 What do you mean by expert systems? Give examples of expert systems.

Ans: Expert systems are computer software. These softwares fall under the category of Artificial Intelligence which is a branch of computer science. These softwares are primarily developed using AI technology. Such software systems have specialized knowledge of a particular field, subject or skill. Here are some examples of expert systems:

1.DENDRAL: This is an expert system for chemical analysis.

2.MYCIN: This expert system specializes in the treatment of blood infections.

21 What is the difference between human system and expert system?

Ans: The differences between the human system and the expert system are as follows:

Human System	Expert System
1. Its capacity decreases with time.	1. Its capacity is permanent.
2. Human outcomes cannot be predicted.	2. The results obtained from these are consistent.
3. They are difficult to transfer.	3. They can be easily transferred.
4. Human experts are expensive.	4. It is a cheaper alternative than a human being.

22 Summarize about some computer languages used in the field of AI?

Ans: Computer Languages used to develop Artificial Intelligence are as follows:

1. **PYTHON:** This language is widely used in the field of Artificial Intelligence.
2. **LISP:** LISP is a very old language for the development of AI. It was developed in 1958 by John McCarthy, the father of AI.
3. **PROLOG:** This language is used to work on medical projects and is also used extensively to develop Expert Systems.
4. **JAVA:** Java can also be considered as a good option for the development of AI.
5. **R:** This language is a good choice for statistical analysis.

23 What is digitalization?

Ans: Digitalization means the process of converting information into digital medium. Converting information to a digital medium means converting information into a computer readable and manageable form. In digital media, information is stored in bits. Nowadays pictures, documents, audio, video, etc. can be converted to digital medium with the help of various devices. Examples of digitalization are land records, Aadhaar cards, e-books etc.

24 Describe Net Banking.

Ans: Net-banking is also called internet-banking. Using Net Banking, we can easily perform a variety of banking activites from home at any time, such as:

1. View our bank account statement
2. Make a variety of online payments
3. Pay bills
4. Transfer money to other accounts, etc.

25 What do you mean by E-Commerce.

Ans: E-commerce is also called electronic-commerce or internet-commerce. E-commerce means buying or selling goods through the internet, using services, transacting money, etc. With the help of e-commerce, business and commerce have flourished. Amazon, Flipkart, eBay, OLX, Quikr, etc. are prime examples of e-commerce websites.

26 Name types of E-Commerce.

Ans: Following are the names of types of e-commerce:
1. Business to Business (B2B)
2. Business to Consumer (B2C)
3. Consumer to Consumer (Consumer to Consumer - C2C)
4. Consumer to Business (C2B)

27 Write down the benefits of online payment.

Ans: The main benefits of online payment are as follows:
1. Online payment is a very easy and convenient way to transact money.
2. With this facility, there is no need to keep more cash in our pocket.
3. Due to online payment, we can easily make money transactions anytime and anywhere.
4. There are various concessions offered by the government on digital payments to promote digital payments. This returns a small percentage of what we have paid back to our account.

28 Describe Digi Locker.

Ans: DIGILOCKER is a secure way to store all our important documents online. We need to register online to store documents on Digilocker. Our account is linked to Aadhaar card during registration. This account provides 1GB of cloud storage to the person concerned. In Digilocker, we can store other documents besides educational documents like Aadhaar card, driving license etc.

29 What is e-learning?

Ans: E-learning is also called Electronic-Learning or Online Learning or Online Education. E-learning means getting online education. It is an easy and comfortable way to get an education. Using this learning method, we can study online courses from home. The exam is also given online. After passing the examination, the certificate can also be downloaded from the website of the concerned institution. Course related materials like e-books, video or audio lectures etc. are also provided online by the concerned institute. MOOCs, SWAYAM, SWAYAM-PRABHA, PSEB E-BOOKS etc. are some of the important popular e-learning tools.

30 What is digital or online payment?

Ans: Online payments are also called Digital Payments or E-Payments or Electronic Payments. This is an easy and fast way to make cashless payments. Both the payer and the receiver use digital media. Money transfer, purchase of goods, payment of bills, etc. can be done easily through digital payment. Credit-card, debit-card, e-wallet, net-banking, Bhim app etc. can be used for online payment.

1 What are network devices? Describe any three network devices.

Ans: Network device refers to the hardware devices that are used to build a network. Different types of network devices are used for different types of networks, such as: switches, hubs, routers, bridges, gateways, brouters, etc. Following is the description of some of the major network devices:

1. SWITCH: This device connects the various devices in a network, such as computers, printers, routers, or other switches, so that these devices can communicate with each other.

2. ROUTER: This device is used to connect our network to the Internet. It is a switch-like device that sends data packets to the network based on its IP address.

3. BRIDGE: This device is used to connect two different Ethernet (LANs) networks. It uses the MAC address to forward data packets to the network. This device has only one input port and only one output port. That is why it is also called 2-port device.

2 What is Unguided Media? Explain any two media.

Ans: Unguided media is a type of transmission media. Using this media, data is transferred through air without using cable wires. This type of communication is often referred to as wireless communication. In this media, data transfer can take place in any direction instead of a fixed path. Bluetooth, WiFi, Radio Waves, Satelites etc. are the examples of Unguided Media.

1. WiFi: Full Form of WiFi is Wireless Fidelity. It is a popular wireless networking technology. Using this technology, we can exchange wireless information between two or more devices connected to the same network.

2.Bluetooth: It is a kind of radio communication technology. It enables short-distance wireless networking between phones, computers and other networking devices. The process used to connect two Bluetooth devices is called "pairing".

3 What is a Twisted Pair Cable? Define its advantages and disadvantages.

Ans: Twisted pair cable is a guided transmission media. It is used to transmit data across a network. This cable consists of two different insulated copper wires, which are twisted together. The first wire is used for data transfer and the second wire is used for grounding (earthing). The wires are twisted together to reduce cross-talk.

Advantages of Twisted Pair Cable:
1. These cables can be used for both analog and digital broadcasting.
2. These cables are cheap for short distances.
3. If any part of the network is damaged, the entire network is not down.

Disadvantages of Twisted Pair Cable:
1. The signal cannot travel over the long distances without the use of repeaters.
2. These wires are very thin and break easily.

4 What is Fibre Optic Cable? Define its advantages and disadvantages.

Ans: Optical fiber cable is a guided transmission media. It is used to transmit data across a network. It transfers digital data signals in the form of light. This cable is made up of many thin flexible optical fibers. Each fiber is made up of three layers:

1. Core: It is made up of high-quality silica glass or plastic.
2. Cladding: It is also made up of high-quality silica glass or plastic.
3. Buffer: It is an outer protective cover made of plastic.

Advantages of optical fiber:
1. It is suitable for industrial and noisy areas.
2. Its data transfer rate is very high.
3. It can be used to transfer data over hundreds of miles.

Disadvantages of optical fiber:
1. Optical fiber cables are expensive.
2. These wires are not easy to use.

5 What is Communication Mode? Define its types in detail.

Ans: Communication mode is also known as transmission mode. Transmission mode is the process of transferring data or information between two devices connected within a network. There are three types of communication modes:

1. Simplex mode: In this mode of communication, the communication is unidirectional. Only one of the devices in this mode can send a signal and the other can only receive a signal. For example: Communication between keyboard and computer.

2. Half-duplex mode: In this communication mode, the flow of communication can be in both directions, but only one device is capable of communicating at a time. For example: Walkie-talkie

3. Full duplex mode: Even in full duplex mode, the flow of communication is in both directions, but communication is possible in both directions at the same time. For example: Communication between two people using mobile phones.

6. What is Information Technology? Describe the various applications of Information Technology?

Ans: Information technology is used in every field of human life. Here is a description of some of the application areas of information technology:

1.Business: Information technology is used in business to run it smoothly.

2.Classroom education: This application area uses computers, smart boards etc. as a medium of instruction for teaching purposes.

3.Online education: In online education, students can get education from anywhere by using internet.

4.Health: Information technology has greatly improved the field of health. Information technology is used to manage lab test results, patient records, etc.

5.Media: Information technology has changed the face of media. TV, radio, online websites etc. are being used to reach people.

6.Transportation: In the field of transportation, information technology is used for various purposes, such as: booking railways and airplane tickets from home, availability of seats, travel time, etc.

7.Telecommunications: Information technology has opened the door to new telecommunication services, such as: exchanging information via email, video conferencing etc,

8.Entertainment: The computer has become an important tool for watching movies, listening music and playing games etc.

7. Describe Android Technology with its advantages.

Ans: Android is an operating system. It is used for mobile devices. It was developed by the Open Handset Alliance and later supported by Google. It was later used for touch screen devices, cellphones and tablets.

Benefits of Android:

1. It is compatible with different platforms, such as Windows, Linux operating system, etc.
2. It supports different media, such as: MP3, MP4 etc.
3. It supports various technologies, such as: Camera, Bluetooth, Wi-Fi etc.
4. It supports multi-tasking.
5. It can be used easily.

8. Write short Notes on: Nano Technology and Wi-Fi.

Ans: Nanotechnology and WI-FI technologies are described as follows:

1.Nanotechnology: Nanotechnology is the engineering in which electronic components are manufactured to the size of nanometers. These electronic components are very small in size and structure. Nanotechnology is used in every field, such as computer science, physics and engineering. The processor in the smartphone is also possible due to the nanotechnology which is small in size but works like a big computer..

2.WI-FI: Its full name is Wireless Fidelity. It is a popular wireless networking technology. This technology uses radio waves for wireless high-speed internet and network connections. With WIFI we can exchange wireless information between two or more devices connected to the same network.

9. Describe Virtual Reality with its advantages.

Ans: Virtual reality means letting us experience things through computers that don't really exist. It is a computer technology used to create an imaginary world. When we watch a 3D movie, we feel as if everything is actually happening in front of us. It's all our imagination and it doesn't really happen. Some benefits of virtual reality:

1. Virtual reality has made viewing technology more fun.
2. Doctors take advantage of virtual reality to diagnose new medical symptoms.
3. It creates an imaginary world that matches the reality.
4. Virtual reality makes learning easier.
5. The use of virtual reality provides a better user experience.

10. Describe Internet of Things (IoT) with its advantages

Ans: The Internet of Things or (IoT) is a new technology that focuses on making human life more comfortable. The Internet of Things (IoT) is a cyber physical system that uses sensors to collect data from the physical world. It

is a network of interconnected digital devices and objects. The Internet of Things (IoT) aims to connect everyday devices, such as ACs, refrigerators, TVs etc. to the Internet.

Some of the benefits of the Internet of Things (IoT):

1. IoT devices work automatically so it makes human work easier.
2. All devices are more secure as they are automatic and technical.
3. They definitely save a lot of human time due to high mechanical processing.
4. We and our home appliances - cameras etc. stay connected to each other through this technology.
5. Our home appliances can be turned on and off automatically, which helps in efficient use of
6. electricity and energy.

11. Write down the types of e-commerce in detail.

7. Ans: E-commerce can be divided into four main types:

8. **1.Business to Business (B2B):** In this type of e-commerce, different companies do their business with each other. This type of e-commerce involves only manufacturers, wholesalers and retailers.

9. **2.Business to Consumer (B2C):** It includes companies and consumers. Examples: Amazon, Flipkart, eBay etc.

10. **3.Consumer to Consumer (C2C):** In this type of e-commerce, Consumers are in direct contact with each other and no company is involved. In this model, people can sell and buy their personal belongings to each other. It is usually used by people to sell their surplus or second-hand goods. For example: OLX, Quikr etc.

11. **4.Consumer to Business (C2B):** In this type of e-commerce, consumer provides his goods or services to the company. Example: An individual develops his own software and sells it to a company.

12. Write down the advantages and disadvantages of e-commerce.

13. Ans: The advantages and disadvantages of e-commerce are described as follows:

14. Benefits of e-commerce:

15. 1.E-commerce companies can provide their goods or services anywhere in the world.
16. 2.E-commerce saves a lot of money as we can buy directly from the manufacturing company, which eliminates many taxes and additional costs. This is how we get the product at a lower price.
17. 3.Purchased goods are delivered to the consumer in the shortest possible time by the companies directly to the address given by the consumer.
18. 4.Shopping can be done at any time through e-commerce. Business never stops here.
19. 5.From the long list of items on e-commerce websites, we can select any item to purchase very easily.
20. Disadvantages of e-commerce:
21. 1.Items purchased through e-commerce are not immediately received by the customer, as it takes a few days for the e-commerce company to deliver the goods to the customer's given address.
22. 2.The quality of the item purchased through e-commerce is known to the customer when he receives the item.
23. 3.E-commerce websites store important customer details and information. If this information is obtained by an unauthorized person, the customer may suffer heavy financial or personal loss.

13. Give brief note on various digital or online payment modes.

24. Ans: There are many ways to pay online. Here is a description of some of the major online payment methods:
25. **1.Credit Cards:** This is a plastic card issued by banks to their customers. When the customer makes a purchase using this card, the concerned bank pays for that purchase. The customer has to repay the payment made by the bank within the stipulated time.
26. **2.Debit Cards:** Like a credit card, it is a plastic card. When a customer pays by debit card, the payment amount is immediately deducted from the amount deposited in the customer's account.
27. **3.E-Wallets:** This method of payment uses digital payment apps. These apps store the customer's credit, debit card or bank account information so that payments can be made easily. Paytm, JioMoney, Google Pay etc. are some of the major e-wallet apps.
28. **4.Net Banking:** Net-banking is also called internet-banking. Using Net Banking, we can easily perform various banking related activities at any time from home. It also allows us to make different types of online payments.
29. **5.BHIM App (Bharat Interface for Money):** BHIM is a mobile app. It's an easy and fast way of payment. Payment is made by using the UPI ID of the person concerned or by scanning the QR Code.

14. What do you mean by E-Governance? Define its working system?

Ans: E-Governance is a functional system in which governments, citizens and organizations participate in the online facilities and services. All of them perform their activities using the internet in different ways. The workings of e-governance can be explained under the following sections:

1.G2G (Government to Government): This type of e-governance includes online services in which the Central Government and the State Governments share data and information with each other.

2.G2C (Government to Citizen): In this form of e-governance, the government provides services and facilities to its citizens. These services are free or provided at very low cost. Such as: online payment of bills, online payment of income tax etc.

3.G2B (Government to Business): This type of e-governance provides services and facilities to businesses by the government. For example: online services related to online sales, purchase of goods, taxes on goods and subsidies etc.

4.G2E (Government to Employee): In this form of e-governance, the government provides services and facilities to its employees. Such as: online services for pay-bills of employees, maintenance of their service records, departmental transfers etc. For example: iHRMS

15. What are the benefits and limitations of E-Governance?

Ans: The advantages and disadvantages of e-governance are as follows:

Benefits of e-Governance:

1. People can easily get e-governance services online or at their nearest Service or Suwidha Kendras.
2. With the advent of e-governance, government work has also accelerated.
3. E-Governance reduces the cost of documentation.
4. e-Governance has created a transparent environment in the working style of all offices.
5. The concerned officer or employee is liable for any delay in work.

Disadvantages of e-Governance:

1. Uneducated or technically ignorant people cannot avail these services properly.
2. We must have Internet access to use these services.
3. Opening a service center in every village is an expensive task.
4. The Internet cannot be considered completely secure.

16. What is Aadhar card? Describe its characteristics?

Ans: Aadhaar is a unique 12-digit identification card number. This number is issued to Indian citizens by UIDAI (Unique Identification Authority of India). No two people in India can have the same Aadhaar number. Basic characteristics of aadhar card are as follows:

1. Unique Identity: Aadhaar provides a unique identity to every Indian citizen.
2. Residential document: The complete residential address of the person concerned is printed on it.
3. No expiration date: There is no expiration date of Aadhaar card.
4. Identity Proof: Since the Aadhaar card contains personal and biometric information of the person, it can be used as proof of identity.
5. Online Authentication: Nowadays authentication is done only through Aadhaar card number for various types of online facilities.

17. Write down the list of services provided by Sewa/Suvidha Kendra?

Ans: Following are some of the online services and facilities offered by the service centers:

1. Issuance of residency certificate

2. Issuance of Caste Certificate

3. Issuance of birth and death certificate

4. Issuance of income certificate

5. Issuance of Aadhaar Card

6. Issuance of Certificate of Religion

7. Issue copies of registry, mutations.

8. Issuance of Vehicle Registration (RC) Certificate

9. Filling up old age/widow pension forms

10. Issuance of driving license

11. Submitting electricity, telephone and many other types of bills online.