

IPUCET 2023 BCA Question Paper with Solutions

Time Allowed :2 Hour 30 Minutes	Maximum Marks :400	Total Questions :100
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1. The two kinds of main memory are:

- (a) ROM and RAM
- (b) primary and secondary
- (c) floppy disk and hard disk
- (d) direct and sequential

Correct Answer: (a) ROM and RAM

Solution: The two main types of memory are ROM (Read-Only Memory) and RAM (Random Access Memory). These are essential for storing and retrieving data on a computer.

💡 Quick Tip

RAM is used for temporary storage, while ROM holds the permanent instructions for booting up a computer.

2. In computer terminology, what is the full form of RAM?

- (a) Random Access Memory
- (b) Repeated Access Memory
- (c) Rapid Access Memory
- (d) Regular Access Memory

Correct Answer: (a) Random Access Memory

Solution: RAM stands for Random Access Memory. It is a type of computer memory that can be accessed randomly, meaning any byte of memory can be accessed without touching the preceding bytes.

💡 Quick Tip

RAM is volatile memory, meaning it loses its contents when the computer is turned off.

3. Permanent instructions that the computer use when it is turned ON and are not changed by other instructions are contained in:

- (a) ROM
- (b) RAM
- (c) ALU
- (d) SRAM

Correct Answer: (a) ROM

Solution: ROM (Read-Only Memory) contains permanent instructions that are used when the computer is powered on. These instructions typically include the boot-up process and basic operations.

💡 Quick Tip

ROM is non-volatile, meaning its data is not erased when the power is turned off.

4. What is the full form of PROM?

- (a) Programmable Read Only Memory
- (b) Program Read Output Memory
- (c) Program Read Only Memory
- (d) Primary Read Only Memory

Correct Answer: (a) Programmable Read Only Memory

Solution: PROM stands for Programmable Read-Only Memory. It is a type of ROM that can be programmed by the user after it is manufactured.

 Quick Tip

PROM can be programmed only once, and the data stored in it cannot be changed after programming.

5. Which of the following acts as a buffer between the CPU and the main memory?

- (a) primary memory
- (b) cache memory
- (c) secondary memory
- (d) RAM

Correct Answer: (b) cache memory

Solution: Cache memory acts as a high-speed buffer between the CPU and the main memory (RAM). It stores frequently accessed data and instructions to speed up processing.

 Quick Tip

Cache memory is much faster than RAM and helps in improving the overall speed of the system.

6. The storage device used to compensate for the difference in rates of flow from one device to another is termed as:

- (a) chip
- (b) channel
- (c) floppy
- (d) buffer

Correct Answer: (d) buffer

Solution: A buffer is a temporary storage area used to compensate for differences in the rates of flow of data between devices. It helps in managing data flow between devices with different speeds.

 Quick Tip

Buffers are commonly used in computing to smooth data transfers, especially between hardware components.

7. Which media has the ability to have data/information stored (written) on them by users more than once?

- (a) CD-R discs
- (b) CD-RW discs
- (c) Zip discs
- (d) Optical discs

Correct Answer: (b) CD-RW discs

Solution: CD-RW (Compact Disc ReWritable) discs allow users to write data multiple times, unlike CD-R discs, which are write-once. CD-RW can be erased and rewritten many times.

 Quick Tip

CD-RW discs are ideal for temporary storage or reusing data multiple times, unlike other optical media.

8. The term Bit is short for:

- (a) megabyte
- (b) binary language
- (c) binary digit
- (d) binary number

Correct Answer: (c) binary digit

Solution: The term "bit" stands for "binary digit," which is the smallest unit of data in computing and represents either 0 or 1 in the binary number system.

 Quick Tip

A bit is the fundamental building block of digital information, represented as either 0 or 1.

9. KiloByte equals how many bytes?

- (a) 1000
- (b) 1035
- (c) 1008
- (d) 1024

Correct Answer: (d) 1024

Solution: 1 Kilobyte (KB) equals 1024 bytes. This is the standard in computing, where 1024 bytes make up one KB.

 Quick Tip

In computing, binary multiples are used, so 1 KB is equal to 1024 bytes, not 1000.

10. How many kilobytes make a megabyte?

- (a) 128
- (b) 1024

- (c) 256
- (d) 512

Correct Answer: (b) 1024

Solution: 1 Megabyte (MB) is equal to 1024 Kilobytes (KB). This follows the same binary system used in computing for data measurement.

💡 Quick Tip

In data storage, the relationship between bytes, kilobytes, and megabytes is based on powers of 2.

11. The term 'gigabyte' refers to:

- (a) 1024 byte
- (b) 1024 kilobyte
- (c) 1024 megabyte
- (d) 1024 gigabyte

Correct Answer: (c) 1024 megabyte

Solution: 1 gigabyte (GB) is equal to 1024 megabytes (MB), according to the standard data storage measurement.

💡 Quick Tip

In the binary system of data storage, 1 GB equals 1024 MB, which is different from the metric system (1 GB = 1000 MB).

12. Which of the following is an octal number equal to decimal number $(896)_{10}$?

- (a) 0061
- (b) 6001
- (c) 1006
- (d) 1600

Correct Answer: (d) 1600

Solution: To convert the decimal number 896 to octal, divide it by 8 and record the remainders:

$$896 \div 8 = 112 \text{ (remainder 0)}$$

$$112 \div 8 = 14 \text{ (remainder 0)}$$

$$14 \div 8 = 1 \text{ (remainder 6)}$$

$$1 \div 8 = 0 \text{ (remainder 1)}$$

Thus, 896 in decimal equals 1600 in octal.

💡 Quick Tip

When converting from decimal to octal, keep dividing by 8 and collecting the remainders.

13. The most widely used code that represents each character as a unique 8-bit code is:

- (a) ASCII
- (b) UNICODE

- (c) BCD
- (d) All of the above

Correct Answer: (a) ASCII

Solution: ASCII (American Standard Code for Information Interchange) is the most widely used character encoding scheme, representing characters as unique 8-bit codes.

💡 Quick Tip

ASCII is a character encoding standard that uses 7 or 8 bits to represent text and control characters.

14. Two inputs A and B of NAND gate have 0 output, if:

- (a) A is 0
- (b) B is 0
- (c) Both are zero
- (d) Both are 1

Correct Answer: (d) Both are 1

Solution: A NAND gate gives an output of 0 only when both inputs are 1. In all other cases, the output is 1.

💡 Quick Tip

The NAND gate is the inverse of the AND gate, giving a 0 output only when both inputs are 1.

15. Which of the following are known as universal gates?

- (a) NAND and NOR
- (b) AND and OR
- (c) XOR and OR
- (d) AND

Correct Answer: (a) NAND and NOR

Solution: NAND and NOR gates are known as universal gates because any other logic gate (AND, OR, NOT) can be implemented using only NAND or NOR gates.

💡 Quick Tip

NAND and NOR gates are powerful because they can be used to create all other logic gates in digital circuits.

16. If A represents '1' and o represents '0'. What will be the one's complement of oAAooA?

- (a) 011001
- (b) 100110
- (c) 101010
- (d) 000000

Correct Answer: (b) 100110

Solution: To find the one's complement, we replace every 1 with 0 and every 0 with 1. The one's complement of 010100 is 100110.

💡 Quick Tip

The one's complement of a binary number is obtained by flipping each bit (0 becomes 1 and 1 becomes 0).

17. A collection of various programs that helps to control your computer is called:

- (a) system software
- (b) application software
- (c) Microsoft Excel
- (d) Microsoft Word

Correct Answer: (a) system software

Solution: System software is responsible for managing the hardware and running the application software. Examples include the operating system, utility programs, etc.

💡 Quick Tip

System software includes the operating system and utilities that help manage and maintain computer resources.

18. Operating system is a:

- (a) application software
- (b) system software
- (c) hardware
- (d) language

Correct Answer: (b) system software

Solution: An operating system is system software that manages computer hardware, software resources, and provides common services for application programs.

💡 Quick Tip

The operating system is essential for managing the computer's hardware and software resources.

19. A kind of system software, which is responsible for loading and relocating the executable program in the main memory is:

- (a) loader
- (b) linker
- (c) translator
- (d) presentation software

Correct Answer: (a) loader

Solution: The loader is responsible for loading programs into the computer's main memory for execution. It also handles relocation if required.

💡 Quick Tip

The loader is an essential component of the system software that prepares the program for execution.

20. Application software:

- (a) is used to control the operating system
- (b) is designed to help programmers
- (c) performs specific tasks for computer users
- (d) is used for making design only

Correct Answer: (c) performs specific tasks for computer users

Solution: Application software is designed to help users perform specific tasks like word processing, spreadsheet calculations, or gaming. It is user-oriented.

💡 Quick Tip

Application software includes programs that help users accomplish specific tasks, such as office applications and media players.

21. Which among the following is not an example of system software?

- (a) Operating System
- (b) Debugger
- (c) Software Driver
- (d) Adobe Photoshop

Correct Answer: (d) Adobe Photoshop

Solution: Adobe Photoshop is an application software used for image editing, while the other options (Operating System, Debugger, and Software Driver) are types of system software used to manage the system and hardware.

💡 Quick Tip

System software is essential for managing computer hardware and providing a platform for running application software.

22. Example(s) of open-source software is/are:

- (a) Linux
- (b) Unix
- (c) MySQL
- (d) All of these

Correct Answer: (d) All of these

Solution: Linux, Unix, and MySQL are all examples of open-source software, meaning their source code is publicly available and can be modified and distributed by users.

💡 Quick Tip

Open-source software is often free to use and can be customized to suit individual needs.

23. Which of the following is the correct reason to use an operating system?

- (a) To manage resources
- (b) To control the hardware
- (c) To provide an interface between the hardware and user
- (d) All of the above

Correct Answer: (d) All of the above

Solution: Operating systems manage hardware resources, control hardware, and provide an interface for users to interact with the system. All the listed options are key functions of an operating system.

💡 Quick Tip

An operating system is responsible for the overall functioning of a computer, managing resources, and ensuring smooth operation of programs.

24. Which of the following is an operating system?

- (a) Linux
- (b) Debugger
- (c) Mozilla
- (d) Google Chrome

Correct Answer: (a) Linux

Solution: Linux is an operating system, whereas the other options (Debugger, Mozilla, and Google Chrome) are either software tools or browsers.

💡 Quick Tip

Operating systems like Linux manage hardware and software resources and provide a platform for applications to run.

25. Which one of the following is not an operating system?

- (a) Linux
- (b) Unix
- (c) Intel
- (d) Windows

Correct Answer: (c) Intel

Solution: Intel is a company that manufactures processors, while Linux, Unix, and Windows are all operating systems.

💡 Quick Tip

An operating system is responsible for managing hardware and software resources on a computer, while Intel is a hardware manufacturer.

26. Which among the following is not a mobile operating system?

- (a) Android
- (b) Safari
- (c) Symbian
- (d) iOS

Correct Answer: (b) Safari

Solution: Safari is a web browser, not a mobile operating system. Android, Symbian, and iOS are all mobile operating systems.

 Quick Tip

Mobile operating systems manage hardware and software on mobile devices, while Safari is just a web browser.

27. Python is a:

- (a) low level language
- (b) high level language
- (c) machine language
- (d) assembly language

Correct Answer: (b) high level language

Solution: Python is a high-level programming language known for its readability and ease of use. It is abstracted from the hardware and allows programmers to focus more on solving problems.

 Quick Tip

High-level languages like Python are easier to write, read, and maintain compared to low-level languages.

28. The central processing unit consist of:

- (a) The arithmetic logic unit
- (b) The registers
- (c) The control unit
- (d) All of the above

Correct Answer: (d) All of the above

Solution: The Central Processing Unit (CPU) consists of the Arithmetic Logic Unit (ALU), the registers, and the Control Unit. These components work together to perform computations and manage data.

 Quick Tip

The CPU is the brain of the computer, and its components are responsible for executing instructions and managing data flow.

29. The computer keyboard in English normally uses:

- (a) Abcdef base
- (b) QWERTY base
- (c) Asdfg base
- (d) None of the above

Correct Answer: (b) QWERTY base

Solution: The most commonly used keyboard layout in English-speaking countries is the QWERTY layout, named after the first six letters on the top row of the keyboard.

💡 Quick Tip

The QWERTY layout is designed for typewriters and is still widely used in modern computer keyboards.

30. Alta Vista is a:

- (a) Virus
- (b) Vista theme
- (c) Windows OS
- (d) Search Engine

Correct Answer: (d) Search Engine

Solution: Alta Vista was one of the first popular search engines on the internet. It was launched in the 1990s and provided internet search services before being overshadowed by Google.

💡 Quick Tip

Search engines like Alta Vista are used to search and retrieve information from the web.

31. The forces acting at a point are called as:

- (a) Collinear forces
- (b) Coplanar forces
- (c) Concurrent forces
- (d) Unit forces

Correct Answer: (c) Concurrent forces

Solution: Concurrent forces are the forces that act on a point and are directed toward or away from the point of action.

💡 Quick Tip

In concurrent forces, all the forces meet at a common point, but their directions may be different.

32. What is the distance between the focus and the pole of the minor is known as?

- (a) Centre of Curvature
- (b) Focal length

- (c) Mirror number
- (d) Radius of curvature

Correct Answer: (b) Focal length

Solution: The distance between the focus and the pole of the mirror is called the focal length.

 Quick Tip

The focal length is a key property of mirrors, influencing their ability to converge or diverge light.

33. What can be the maximum number of electrons in a shell, if the principal quantum number is n ?

- (a) n
- (b) n^2
- (c) $2n^2$
- (d) $3n^3$

Correct Answer: (c) $2n^2$

Solution: The maximum number of electrons that can occupy a shell is given by the formula $2n^2$, where n is the principal quantum number.

 Quick Tip

The formula $2n^2$ is used to calculate the maximum number of electrons in a shell based on its quantum number.

34. What will be the number of neutrons in an atom having atomic number 35 and mass number 80?

- (a) 35
- (b) 45
- (c) 55
- (d) 80

Correct Answer: (b) 45

Solution: The number of neutrons can be calculated by subtracting the atomic number from the mass number:
Number of neutrons = Mass number - Atomic number = $80 - 35 = 45$.

 Quick Tip

The number of neutrons in an atom is the difference between its mass number and atomic number.

35. Who can be associated with the theory of evolution?

- (a) Charles Darwin
- (b) Mendel
- (c) Stanley Miller
- (d) Harold Urey

Correct Answer: (a) Charles Darwin

Solution: Charles Darwin is best known for his theory of evolution by natural selection, which explains the process by which species evolve over time.

💡 Quick Tip

Darwin's theory of evolution revolutionized biology, emphasizing natural selection as the mechanism of evolution.

36. Which of the following hormones is known to be helpful in coping with stress?

- (a) Serotonin
- (b) Calcitonin
- (c) Melatonin
- (d) Testosterone

Correct Answer: (a) Serotonin

Solution: Serotonin is a hormone known to have an important role in regulating mood and stress. It is often referred to as the "feel-good" hormone.

💡 Quick Tip

Serotonin helps to regulate mood, anxiety, and stress levels, contributing to emotional well-being.

37. Washing soda is used:

- 1. for removing permanent hardness of water
- 2. for disinfecting drinking water
- 3. as a cleaning agent for domestic purpose

Which of the above is/are correct?

- (a) Only 1 and 2
- (b) Only 1 and 3
- (c) Only 2 and 3
- (d) All of the above

Correct Answer: (b) Only 1 and 3

Solution: Washing soda (sodium carbonate) is used for removing permanent hardness in water and as a cleaning agent. It is not commonly used for disinfecting drinking water.

💡 Quick Tip

Washing soda is effective in softening hard water and cleaning purposes, but not for water disinfection.

38. The apparent weight of a man in a lift is less than the real weight when:

- (a) the lift is going up with an acceleration
- (b) the lift is going down with uniform speed
- (c) the lift is going up with uniform speed
- (d) the lift is going down with an acceleration

Correct Answer: (d) the lift is going down with an acceleration

Solution: When the lift is moving downward with acceleration, the apparent weight of a person becomes less than their real weight due to the opposing force from the downward movement.

💡 Quick Tip

In a lift moving downward with acceleration, the apparent weight decreases as the downward force due to acceleration reduces the total normal force.

39. What is the unit for momentum?

- (a) newton second
- (b) joule second
- (c) erg second
- (d) pascal second

Correct Answer: (a) newton second

Solution: Momentum is the product of mass and velocity, and its unit is newton second (N·s), where $1\text{ N} = 1\text{ kg}\cdot\text{m/s}$.

💡 Quick Tip

Momentum is the product of an object's mass and velocity, and the SI unit of momentum is newton second (N·s).

40. Which of these indicates the splitting of different colours of light in a prism?

- (a) Reflection of light
- (b) Dispersion of light
- (c) Diffraction of light
- (d) Refraction of light

Correct Answer: (b) Dispersion of light

Solution: Dispersion of light occurs when different colors of light are separated due to varying refractive indices of different wavelengths of light in a medium like a prism.

💡 Quick Tip

Dispersion is the separation of light into its component colors, typically observed when light passes through a prism.

41. Which among the following plays a role in production of alcohol in beer?

- (a) Bacteria
- (b) Protozoan
- (c) Virus
- (d) Yeast

Correct Answer: (d) Yeast

Solution: Yeast plays a crucial role in the fermentation process, where it converts sugars into alcohol and carbon dioxide, essential for beer production.

💡 Quick Tip

Yeast is responsible for the fermentation of sugars into alcohol in the production of alcoholic beverages like beer.

42. What is the name of eye drops designed to improve age-related near-vision problems that are recently approved by the US Food and Drug Administration?

- (a) Vuity
- (b) Vision
- (c) Corneas
- (d) Eye power

Correct Answer: (a) Vuity

Solution: Vuity is an eye drop solution approved by the FDA to treat age-related near-vision problems (presbyopia) by improving near-focus.

💡 Quick Tip

Vuity works by using a drop formulation that helps improve near vision, particularly useful for individuals with presbyopia.

43. Scientists working at which one of the following discovered 'God's particle'?

- (a) NASA
- (b) CERN
- (c) ISRO
- (d) CNES

Correct Answer: (b) CERN

Solution: The Higgs boson, often referred to as the "God's particle," was discovered by scientists at CERN (European Organization for Nuclear Research) in 2012.

💡 Quick Tip

The discovery of the Higgs boson at CERN in 2012 was a breakthrough in particle physics, confirming the existence of the Higgs field.

44. The additional 8% human genome sequenced account for million new letters added to the existing sequenced DNA.

- (a) 40
- (b) 200
- (c) 280
- (d) 400

Correct Answer: (d) 400

Solution: The additional 8% of the human genome that was sequenced adds about 400 million new base pairs (letters) to the previously sequenced human DNA.

💡 Quick Tip

The sequencing of the human genome has provided crucial insights into our genetic makeup, with new discoveries continuing to be made.

45. Bacteria was first observed in the year:

- (a) 1892
- (b) 1754
- (c) 1676
- (d) 1588

Correct Answer: (c) 1676

Solution: Bacteria were first observed by Antonie van Leeuwenhoek in 1676, who used a microscope to study water and dental plaque.

💡 Quick Tip

The discovery of bacteria by Leeuwenhoek in 1676 was a significant milestone in microbiology.

46. Virus contains number of ribosomes.

- (a) 18
- (b) 22
- (c) 10
- (d) None of the above

Correct Answer: (d) None of the above

Solution: Viruses do not contain ribosomes. Ribosomes are found in living cells and are responsible for protein synthesis, but viruses lack the machinery for protein synthesis on their own.

💡 Quick Tip

Unlike living organisms, viruses rely on the host cell's ribosomes for protein synthesis.

47. Which of the following statements are true or false?

I. Endemic when it spreads across the globe is called a pandemic.

II. Epidemic is a disease that is permanently present in a region or population

Which of the following options is correct?

- (a) Both I & II are true
- (b) Both I & II are false
- (c) I is true but II is false
- (d) I is false but II is true

Correct Answer: (b) Both I & II are false

Solution: A pandemic refers to a global spread of disease, whereas an endemic is a disease that is regularly found in a particular area. An epidemic refers to a disease outbreak that occurs in a specific region. Thus, both statements are false.

💡 Quick Tip

Remember: "Endemic" refers to disease presence in a region, "epidemic" to local outbreaks, and "pandemic" to global spread.

48. Which taste zone of the human tongue is a sour taste zone?

- (a) Front
- (b) Front sides
- (c) Back
- (d) Back sides

Correct Answer: (d) Back sides

Solution: The back sides of the tongue are responsible for detecting sour tastes, while different areas of the tongue detect various tastes such as salty, sweet, and bitter.

💡 Quick Tip

The tongue has distinct regions that are more sensitive to different tastes, but all regions can detect all types of taste.

49. Blockchain Technology has the following hall mark features/s:

- (a) Reliability and consistency
- (b) Flexibility and reliability
- (c) Traceability and reliability
- (d) Traceability but not reliability

Correct Answer: (c) Traceability and reliability

Solution: Blockchain technology is known for its traceability and reliability in recording transactions, ensuring secure and transparent data handling.

💡 Quick Tip

Blockchain is best known for providing traceability and reliability in data storage and transmission, which are critical features in various industries.

50. Which one among the following is not a characteristic of 'big data'?

- (a) Value
- (b) Veracity
- (c) Consistency
- (d) Velocity

Correct Answer: (c) Consistency

Solution: Big data is characterized by the 4 Vs: Volume, Variety, Velocity, and Veracity. Consistency is not considered one of the main characteristics of big data.

💡 Quick Tip

The 4 Vs of big data (Volume, Variety, Velocity, and Veracity) are crucial in understanding how big data is managed and analyzed.
