लोक सेवा आयोग

नेपाल राष्ट्र बैंक, प्राविधिक, सूचना प्रविधि, सहायक द्रितीय, सहायक (सूचना प्रविधि) पदको खुला प्रतियोगितात्मक लिखित परिक्षा

२०८१।०१।१९

पत्र:प्रथम **KEY [B]**

समय: २ घण्टा ३० मिनेट पूर्णाङ्क : १००

विषय : **Information Technology - I**

**Objective** Time : 30 mins

**Multiple Choice 25\*1 = 25 Marks**

**1.What is the primary purpose of implementing a backup and disaster recovery plan?**

A. To prevent all possible disasters from occurring

B. To minimize the impact of data loss and downtime in the event of a disaster

C. To ensure that no data loss occurs ever

D. To completely eliminate the need for data backup

**2. IDE interface can be used to connect ………….**

A. only hard drive B. only optical drive

C. both hard drive and optical drive D. none of the above

**3. What is the primary difference between a vacuum tube and a semiconductor?**

A. Vacuum tubes are smaller in size

B. Semiconductors use electrons, while vacuum tubes use ions

C. Vacuum tubes are more efficient at high temperatures

D. Semiconductors consume less power

**4. Which of the following transistor circuits in most commonly used?**

A. Common Emitter B. Common Base

c. Common Collector D. Emitter Collector

**5. In a PNP transistor, base will be of ………… material.**

A. P B. N C. Neither P or N D. Either P or N

**6. How do a MOSFETs differ from JFETs?**

A. MOSFETs have higher input impedance

B. JFETs operate at higher temperature

C. MOSFETs are less susceptible to gate capacitance

D. JFETs have a larger channel width

**7. Which of the following terms refers to the method of mapping the consecutive memory blocks to consecutive cache blocks?**

A. Direct Mapping B. Parallel Mapping C. Associative Mapping D. Indirect Mapping

**8. Which ratio is used to measure the performance of cache memory?**

A. Chat Ratio B. Hit Ratio C. Copy Ration D. Data Ratio

**9. What is the name given to the method of accessing the I/O devices by repeatedly? Checking the status flags?**

A. Interrupt based I/O B. Memory Mapped I/O

C. Program-Controlled I/O D. Hardwired I/O

**10. What is the primary function of operating system?**

A. Providing security to the system B. Storing files and directories

C. Running applications software D. Managing hardware resources

**11. What method offers higher speed of I/O transfer?**

A. DMA B. Memory mapped I/O

C. Program-controlled I/O D. Interrupt-initiated I/O

**12. A ……. Is a named location on a disk where all files are stored.**

A. Folder B. Volume C. Label D. Root

**13. Which of the following is not a common security measure in operating systems?**

A. Antivirus Software B. Firewall C. Network Router D. IDS

**14. Which network topology is best suited for large business, which must carefully control and coordinate the operation of distributed branch outlets?**

A. Ring B. Local area C. Hierarchical D. Star

**15. Which of the following accurately describes the concept of subnetting in computer networking?**

A. Subnetting refers to the process of connecting multiple networks together to form a larger network

B. Subnetting is a technique used to translate domain names into IP addresses

C. Subnetting involves encryption data packets to secure then during transmission

D. Subnetting involves dividing a larger network into smaller sub networks

**16. Which of the following is a program that can retrieve files from the World Wide Web and render texts, images or sounds encoded in the files?**

A. Explorer B. Browser C. Web Server D. Web Application

**17. What is the primary function of a firewall in network security?**

A. Encrypting data transmission

B. Filtering network traffic based on predetermined security rules

C. Managing IP addresses

D. Controlling access to network resources

**18. What technology is commonly used for teleconferencing?**

A. VoIP B. Bluetooth C. NFC D. RFID

**19. What happens to a file if it is compressed?**

A. Quality enhances B. Requires less space for storage

C. Requires more time to deliver to client D. Requires decryption

**20.Which signal is used for execution and sequencing of instructions?**

A. Logical signal B. Input signal C. Control signal D. Output Signal

**21. What does the term ‘peripheral device’ refer to the context of computer system?**

A. The main processing unit of computer

B. External devices connected to a computer to provide input and output capabilities

C. The operating system of a computer

D. A network of interconnected computers

**22.Which of the following software programs or hardware device filters all data packets combining through the internet or a network?**

A. Antivirus B. Firewall C. Cookies D. Malware

**23. What is the purpose of a modem in a computer system?**

A. Provides digital security B. Performs arithmetic operations

C. Stores data temporarily D. Converts digital signals to analog signals

**24. What is the purpose of BIOS settings in a computer system?**

A. Managing storage devices

B. Configuring system peripheral

C. Providing instructions for hardware initialization

D. Managing network connection

**25.How many pins are available in parallel port?**

A. 9 B. 15 C. 20 D. 25

Answer Sheet

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 01.B | 02. C | 03.D | 04. A | 05. B | 06. A | 07. A | 08. B | 09. C | 10. D |
| 11. A | 12. A | 13. C | 14. C | 15. D | 16. B | 17. B | 18. A | 19. B | 20. C |
| 21. B | 22. B | 23. D | 24. C | 25. D |  |  |  |  |  |

**Subjective**

**Section "A" – 30 Marks**

1. Briefly explain the characteristics of computer that makes it a useful device for any organization.  
   **[5 Marks]**
2. What is Disaster Recovery? Briefly explain about different backup methods.  
   **[2+3=5 Marks]**
3. What is an IC? Why are ICs so cheap? Why are ICs widely used in modern electronic devices? Explain.  
   **[1+1+3=5 Marks]**
4. Explain about the working principle of Zener diode.  
   **[5 Marks]**
5. What are the common security threats in cyber space? Explain. What measures should be taken to mitigate these threats? Discuss.  
   **[5+5=10 Marks]**

**Section "B" – 45 Marks**

1. What is an interrupt in computing? Explain how processor handles an interrupt.  
   **[1+4=5 Marks]**
2. List the syntax, purpose and examples of any ten DOS commands.  
   **[5 Marks]**
3. Discuss the concept and importance of IP addressing. What are the differences between IPv4 and IPv6 addresses? Write.  
   **[3+2=5 Marks]**
4. What is VPN? When would you use a VPN? How does it enhance network security? Explain.  
   **[1+2+2=5 Marks]**
5. What is data compression? Why is it necessary to compress files? Mention the digital picture and video compression techniques.  
   **[1+2+2=5 Marks]**
6. What is Memory Hierarchy? Explain in detail. Discuss the importance of RAID configuration of disks.  
   **[7+3=10 Marks]**
7. What is the OSI reference model? Explain the basic functions of each layer with example of device operating at different layers. Also, discuss how OSI reference model differs from TCP/IP protocol suite.  
   **[1+6+3=10 Marks]**