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राष्ट्रिय वाणिज्य बैंक लिमिटेड, प्रशासन, सूचना प्रविधि

सहायक (सूचना प्रविधि) पदको पत्र प्रथम

समय २ घण्टा

प्रतियोगितात्मक लिखित परीक्षा

२०८३/०७/१४

KEY [B]

पूर्णा १००

विषय : Information Technology and Management, Banking and Organizational Management

उत्तरपुस्तिकामा KEY अनिवार्य रूपले गरेमा र हुनेछ परीक्षामा calculator, mobile प्रयोग गर्न पाइनेछैन ।

Multiple Choice Objective

Time: 45 minutes
Marks: 50x1-50

1. Which CPU architecture uses separate memory and buses for instruction and data?
   A) Von Neumann Architecture
   B) Harvard Architecture
   C) CISC Architecture
   D) RISC Architecture
2. What is the primary function of the Control Unit?
   A) Perform arithmetic calculations
   B) Direct and coordinate CPU operations
   C) Store permanent data
   D) Display output
3. Which I/O technique allows a device to notify the CPU when it requires attention?
   A) Polling
   B) Caching
   C) Spooling
   D) Interrupt-driven I/O
4. The method of accessing the I/O devices by repeatedly checking the status flags is
   A) Program-controlled I/O
   B) Memory-mapped I/O
   C) I/O mapped
   D) DMA

5. Which device broadcasts incoming data to all connected ports?
   A) Hub
   B) Router
   C) Switch
   D) Bridge
6. In a multiple computer LAN, which of the following devices is used to ensure that data is forwarded only to the port associated with the destination device, rather than being broadcasted to all connected dices?
   A) Router
   B) Hub
   C) Repeater
   D) Switch
7. Which of the following is used by the internet?
   A) Circuit switching
   B) Packet switching
   C) No switching
   D) Internet switching
8. Which of the following techniques holds capability to detect and correct errors in transmitted data over network?
   A) Parity Check
   B) Checksum
   C) Dual Code
   D) Hamming Code
9. Which of the following protocols converts domain name into IP address?
   A) DHCP
   B) ARP
   C) DNS
   D) ICMP
10. Which protocol is used to map an IPv4 address to the corresponding MAC address on a local network?
    A) ARP
    B) DNS
    C) DHCP
    D) ICMP
11. Which notation represents an IPv4 network using CIDR?
    A) 192.168.1.0/24
    B) 192.168.1.0:24

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C) 192.168.1.0-24

D) 192.168.1.0\24

12. Which of the following is an example of symmetric encryption?

A) RSA

B) AES

C) ECC

D) DSA

13. Which of the following security devices is appropriate to control incoming and outgoing network traffic based on predefined security policy such as source/destination IP address and ports?

A) Hub

B) Repeater

C) Firewall

D) DNS Server

14. Social engineering attacks primarily exploit

A) software bugs

B) hardware failures

C) network bandwidth limits

D) human psychology and trust

15. What is the security risk of "Tailgating in premise?

A) An employee leaving computer screen unlocked while going out of desk

B) An attacker sending thousands of spam emails to company

C) Stealing PIN/Password of a person by looking from back side of a user

D) An unauthorized person following an authorized employee to enter the gate without any checking

16. An email looks same like it is from your bank asking you to click a link and reset your login password immediately. What type of attack is this?

A) Spyware

B) Phishing

C) Pharming

D) Email Spoofing

17. Authentication in cybersecurity refers to .....

A) granting permissions after identity is verified

B) verifying the identity of a user

C) encrypting data

D) auditing the usage of the system

18. What is the vision of Nepal's National ICT Policy, 2072?

A) To transform Nepal into an information and knowledge-based society and economy

B) To promote ICT for the productivity of the sectors which are key drivers of the national economy

C) To develop ICT sector as a key driver of Nepal's sustainable development and poverty reduction

D) To empower and facilitate Nepal's participation in the global ICT forum

19. According to the IT Guidelines issued by NRB, how often should a bank's Board-approved IT policy be reviewed at a minimum?

A) Every 1 year

B) Every 2 years

C) Every 3 years

D) Every 4 years

20. Which of the following is not a Two Factor Authentication (2FA)?

A) PIN and Biometric

B) Card and PIN

C) Password and PIN

D) Card and Biometric

21. In an application vulnerable to SQL injection, what is the primary purpose of appending a payload containing ' OR'1'='1 to an input field?

A) Alter database

B) To make a conditional statement always evaluated to true, thereby bypassing authentication logic

C) To escalate to administrator privileges

D) To delete a database table

22. Which type of server acts as an intermediary between a client and the internet?

A) Web Server

B) DNS Server

C) Database Server

D) Proxy Server

23. In which OSI layer does Proxy Server operate?

A) Layer 4

B) Layer 5

C) Layer 6

D) Layer 7

24. ..... are used when the multiple rows of a table are to be processed.

A) Cursors

B) Triggers

C) Procedures

D) Functions

25. Which of the following is used to control the presentation/styling of a web page?

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A) XML

B) HTML

C) CSS

D) UML

26. A view of database that appears to an application prograrn is known as

A) Schema

B) Subschema

C) Virtual table

D) Internal level

27. ..... enforces the parent record cannot be deleted when child record exists.

A) Data integrity

B) Domain integrity

C) Referential integrity

D) Security

28. What is the main purpose of indexing in a database?

A) To remove duplicate records

B) To manage database backups

C) To increase the size of the database

D) To improve the speed of data retrieval

29. In HTTP, ... is used to submit form data securely without appending it to the URL.

A) GET

B) PUT

C) POST

D) HEAD

30. is a common data warehousing technique for handling large scale aggregation quickly.

A) Foreign keys

B) Materialized views

C) Normalization

D) Triggers

31. Which of the following is a preemptive scheduling algorithm?

A) Round Robin

B) Repetitive First

C) Batch Processing

D) First Come First Serve

32. A deadlock in an operating system occurs when

A) a process completes execution unsuccessfully

B) two or more processes are waiting indefinitely for resources held by each other

C) the CPU is idle

D) memory is defragmented

33. The time for the disk arm to move the heads to the cylinder containing the desired sector is called ..... time.

A) Disk

B) Seek

C) Arm

D) Sector

34. Which command is used to setup hard disk?

A) loadfix

B) expand

C) share

D) fdisk

35. Which of the following is commonly associated with UNIX operating system?

A) Primarily designed for gaming

B) Strong command-line interface and multiuser support

C) Primarily designed for graphical user interface

D) Used mainly for document processing

36. Which of the following commands is used to display the contents of a folder or directory in DOS?

A) Disp

B) Show

C) DIR

D) View

37. Copy-on-write is primarily used to optimize

A) network packet transfer

B) disk management

C) process creation via fork

D) file management

38. A system state is 'safe' in the Banker's Algorithm if

A) all processes can complete without deadlock

B) all resources are currently free

C) there is 100% CPU utilization

D) no process is in waiting condition

39. The fundamental building block of an analog computer is the .....

A) Transistor Switch (logic)

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B) Operational Amplifier (Op-Amp)

C) Magnetic Core Memory

D) Integrated Circuit Microprocessor

40. Which computer is best suited for weather forecasting, climate modeling?

A) Desktop Computer

B) Mini Computer

C) Mainframe Computer

D) Supercomputer

41. What does BCC mean in email?

A) Blind Carbon Copy

B) Basic Carbon Copy

C) Backup Carbon Copy

D) Binary Carbon Copy

42. Which HTML tag is used to create a hyperlink on a web page?

A)

B)

C)

D)

43. Which protocol is commonly used for browsing websites securely?

A) HTTP

B) FTP

C) HTTPS

D) SMTP

44. Which of the following is a physical security measure controlling voltage fluctuation?

A) Surge Protection Device

B) AC Voltage

C) Biometrics

D) Ammeter

45. Reinforcement learning is based on

A) labeled images

B) rewards and penalties

C) statistical sampling

D) compression

46. Which of the following requires participants to solve computationally difficult problems in blockchain?

A) Difficulty Level

B) Block Level Computation

C) Consensus Mechanism

D) Authentication

47. Which register holds the address of the next instruction to be executed?

A) IR

B) MAR

C) RAM

D) PC

48. Which of the following is the secondary memory?

A) Register

B) Hard Disk

C) Cache

D) RAM

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49. A CPU has a 3GHz clock frequency. Which statement is the most accurate?

A) The CPU generates approximately 3 billion clock cycles per second

B) The CPU executes exactly 3 billion instructions every second

C) Each instruction necessarily requires exactly one clock cycle

D) The CPU can process exactly 3 billion bytes of data per second

50. The purpose of spindle in Hard Disk is

A) to read files

B) to write files

C) to rotate platter

D) to point address

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वरिष्ठ सहायक (सूचना प्रविधि) पदको

खुला प्रतियोगितात्मक लिखित परीक्षा

२०८३/०७/१४

पत्र प्रथम समय २ घण्टा

पूर्णाङ्क १००

विषय : Information Technology and Management, Banking and Organizational Management

प्रत्येक खण्डको उत्तर छुट्टाछुट्टै उत्तरपुस्तिकामा लेख्नुपर्नेछ । अन्यथा उत्तरपुस्तिका रद्द हुनेछ ।

Subjective
Time: 1 hr 15 mins
Marks: 50
Section "A"

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25 Marks

1. What is Non-Bank Financial Institutions (NBFIs)? Explain their role in the Nepali economy. 2+3=5
2. Explain how digital technologies can improve KYC processes while managing associated risks. 5
3. Identify any four acts that may constitute banking offences as per Banking Offence and Punishment Act, 2064. Also, mention important responsibilities of a bank employee in preventing banking offences. 1+4=5
4. What are the main criteria set by Nepal Rastra Bank Unified Directives for classification of loans into different categories? Explain the relationship between loan classification and loan loss provisioning with reference to Nepal Rastra Bank Unified Directives. 6+4=10

Section "B"
25 Marks
5. Define job motivation. Describe why monetary incentives may alone fail to improve employee performance. 2+3=5
6. Briefly highlight the provisions related to "Work Permit" in Labour Act, 2074. 5
7. What is internal control? Highlight the importance of internal audit in the bank and financial institutions. 2+3=5
8. Explain the major digital/electronic payment instruments used in banking sector of Nepal. Also, describe the advantages of using digital payment systems to customers and banks. 4+6=10

- The End –

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वरिष्ठ सहायक (सूचना प्रविधि) पदको

खुला प्रतियोगितात्मक लिखित परीक्षा

पत्र द्वितीय समय २ घण्टा ३० मिनेट

२०८३/०७/१५

विषय : Information Technology and Management

प्रत्येक Section को उत्तर छुट्टाछुट्टै उत्तरपुस्तिकामा लेख्नुपर्नेछ । अन्यथा उत्तरपुस्तिका रद्द हुनेछ ।

पूर्णाङ्क १००

Section: "A"
30 Marks

1. What is internet? What are the necessary infrastructures required to operate the internet? Mention. 2+3=5
2. Being an IT expert, how will you use the concepts of machine learning in financial fraud detection in banks? Explain with an example. 5
3. What are the secondary storages in computer system? Explain the working mechanism of a hard disk. 2+3=5
4. Explain the roles of device drivers in I/O management in computer system. 5
5. What is memory management? Explain different types of registers with their usages. 2+8=10

Section: "B"
35 Marks
6. What is a router? Explain its functions in a computer network. 1+4=5
7. What is cryptography? How can you secure a network using cryptography? Clarify. 3+2=5
8. What are the functions of an operating system? Differentiate between DOS and UNIX operating systems. 2+3=5

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9. What is database management system? Explain the advantages of relational database management system. 1+4=5
10. Explain insertion, deletion and update anomalies that may occur in an unnormalized database. 5
11. What are the major error detection techniques used in computer networks? Describe Parity Check, Checksum and CRC with suitable examples. 4+6=10

Section: "C"

35 Marks

12. What is cybersecurity? Why is it important in today's digital world? Differentiate between threats and vulnerabilities with suitable examples. 1+1+3=5
13. Differentiate between Denial of Service (DoS) and Distributed Denial of Service (DDoS) attacks. 5
14. Describe the principle of "Least Privilege" and its importance in banking IT security. 2+3=5
15. Define a process in an operating system. Explain CPU scheduling in process management and describe the major CPU scheduling algorithms used in operating systems. 1+2+7=10
16. What is data warehouse? What are the processes involved in data warehousing? Differentiate between a web server and a proxy server highlighting their main functions and applications. 1+4+5=10

- The End -

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