Roll. No. .....

O.M.R. Serial No. | | | | | | | |

Question Booklet Number

PGDCA (SEM.-II) (NEP) EXAMINATION, 2025-26

EMERGING TRENDS IN COMPUTER

[CODE : PGDCA-203]

Paper Code							
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Question Booklet Series
A

Time : 1 : 30 Hours **Max. Marks : 75**

Instructions to the Examinee :

1. Do not open the booklet unless you are asked to do so.
2. The booklet contains 100 questions. Examinee is required to answer 75 questions in the OMR Answer-Sheet provided and not in the question booklet. All questions carry equal marks.
3. Examine the Booklet and the OMR Answer-Sheet very carefully before you proceed. Faulty question booklet due to missing or duplicate pages/questions or having any other discrepancy should be got immediately replaced.
4. Four alternative answers are mentioned for each question as - A, B, C & D in the booklet. The candidate has to choose the correct / answer and mark the same in the OMR Answer-Sheet as per the direction :

(Remaining instructions on last page)

परीक्षार्थियों के लिए निर्देश :

1. प्रश्न-पुस्तिका को तब तक न खोलें जब तक आपसे कहा न जाए।
2. प्रश्न-पुस्तिका में 100 प्रश्न हैं। परीक्षार्थी को 75 प्रश्नों को केवल दी गई OMR आन्सर-शीट पर ही हल करना है, प्रश्न-पुस्तिका पर नहीं। सभी प्रश्नों के अंक समान हैं।
3. प्रश्नों के उत्तर अंकित करने से पूर्व प्रश्न-पुस्तिका तथा OMR आन्सर-शीट को सावधानीपूर्वक देख लें। दोषपूर्ण प्रश्न-पुस्तिका जिसमें कुछ भाग छपने से छूट गए हों या प्रश्न एक से अधिक बार छप गए हों या उसमें किसी अन्य प्रकार की कमी हो, उसे तुरन्त बदल लें।
4. प्रश्न-पुस्तिका में प्रत्येक प्रश्न के चार सम्भावित उत्तर- A, B, C एवं D हैं। परीक्षार्थी को उन चारों विकल्पों में से सही उत्तर छाँटना है। उत्तर को OMR उत्तर-पत्रक में सम्बन्धित प्रश्न संख्या में निम्न प्रकार भरना है :

(शेष निर्देश अन्तिम पृष्ठ पर)

1. Which of the following is the branch of Artificial Intelligence?

(A) Machine Learning

(B) Cyber forensics

(C) Full-Stack Developer

(D) Network Design

2. What is Artificial Intelligence (AI)?

(A) Study of human biology

(B) Simulation of human intelligence in machines

(C) Study of space

(D) Only development of hardware

3. Which of the following is an example of a knowledge-based system?

(A) Compiler

(B) Expert system

(C) Operating system

(D) Text editor

4. Which of the following is NOT a property of AI?

(A) Reasoning

(B) Learning

(C) Emotional thinking

(D) Perception

5. Which property enables an AI system to improve performance based on experience?

(A) Perception

(B) Learning

(C) Planning

(D) Knowledge

6. Which of the following is a popular AI programming language?

(A) HTML

(B) XML

(C) CSS

(D) Python

7. Expert systems are mainly used for :

(A) Gaming

(B) Programming

(C) Networking

(D) Decision-making

8. Which of the following is an open-source AI framework developed by Google?

(A) PyTorch

(B) Scikit-learn

(C) Keras

(D) TensorFlow

9. Which company is known for its AI assistant Alexa?

(A) Google

(B) Apple

(C) Amazon

(D) Microsoft

10. Who introduced the concept of Fuzzy Logic?

(A) Lotfi A. Zadeh

(B) Alan Turing

(C) Seiji Yasunobu

(D) Takeshi Yamakawa

11. Which of the following is a key component of a fuzzy logic system?

(A) Integer arithmetic

(B) Linguistic variables

(C) Boolean operators

(D) Predicate calculus

12. _____ is widely used today for protecting data in transit in a variety of applications such as data transfer on the Internet, and on cellular phone networks.

(A) Architectural security

(B) Data mining

(C) Internet Security

(D) Encryption

13. SSL/TLS protocols are used for :

(A) File compression

(B) Secure communication

(C) Data storage

(D) Virus scanning

14. Which key is used in symmetric encryption?

(A) Only public key

(B) Only private key

(C) Same key for encryption and decryption

(D) No key required

15. Which of the following is not an encryption algorithm?

(A) DES

(B) AES

(C) RSA

(D) MD5

16. What is the output of an encryption process called?

(A) Ciphertext

(B) Plaintext

(C) Hash

(D) Digest

17. What is the block size of Advanced Encryption Standard (AES)?

(A) 64 bits

(B) 128 bits

(C) 256 bits

(D) 512 bits

18. The smallest unit of a digital image is :

(A) Byte

(B) Pixel

(C) Bit

(D) Frame

19. Which format is commonly used for lossless compression?

(A) JPEG

(B) MP3

(C) AVI

(D) PNG

20. Digital image processing deals with :

(A) Analog signals

(B) Networking

(C) Image enhancement using algorithms

(D) Data storage

21. Which of these is a challenge of cloud adoption?

(A) Global accessibility

(B) Data compliance and privacy

(C) Cost efficiency

(D) Flexible scaling

22. Containerization in the cloud helps achieve :

(A) Consistent deployment

(B) Vendor lock-in

(C) Only network segmentation

(D) Database replication

23. Which of these organizations pioneered large-scale public cloud services?

(A) Oracle

(B) IBM

(C) Amazon

(D) Cisco

24. The process of moving applications from local servers to the cloud is called :

(A) Cloud bursting

(B) Cloud splitting

(C) Cloud replication

(D) Cloud migration

25. What does the term 'serverless computing' mean?

(A) Computing without internet

(B) Users manage their own servers

(C) Servers are hidden and managed by cloud providers

(D) No servers exist at all

26. Cloud burst means :

(A) Data corruption in the cloud

(B) Switching workloads temporarily to a public cloud when traffic spikes

(C) Attacking a cloud network

(D) Cloud storage expansion

27. Which layer of cloud architecture provides APIs to manage resources?

(A) Infrastructure management layer

(B) Platform management layer

(C) Application layer

(D) Cloud management layer

28. Which of the following best defines cloud computing?

(A) Delivering computing services over the internet

(B) Storing data on local servers

(C) Using mobile apps

(D) Creating computer networks

29. According to the NIST definition, which of the following is an essential characteristic of cloud computing?

(A) Manual resource provisioning

(B) Single-tenant architecture

(C) On-demand self-service

(D) Offline availability

30. How is cloud computing primarily utilized in the field of Big Data and Internet of Things (IoT)?

(A) By installing operating systems on local smart devices

(B) By providing the massive, scalable computing power and storage

(C) By limiting data processing to local, offline edge networks

(D) By permanently storing data exclusively on physical hard drives

31. How does cloud computing improve business continuity and disaster recovery?

(A) By keeping all data in one single physical location

(B) By ensuring hardware never fails

(C) By requiring manual tape backups to be transported offsite

(D) By allowing data backups and infrastructure to be mirrored across multiple geographic regions

32. An enterprise is evaluating cloud deployment models. They need strict, isolated control over highly sensitive customer data but want to use the public cloud to host their public-facing website. Which deployment model best fits this evaluation?

(A) Public Cloud

(B) Private Cloud

(C) Community Cloud

(D) Hybrid Cloud

33. Which cloud service model offers a complete development and deployment environment, including software development tools?

(A) IaaS (Infrastructure as a Service)

(B) PaaS (Platform as a Service)

(C) SaaS (Software as a Service)

(D) DaaS (Data as a Service)

34. In cloud evaluation, what does "scalability" refer to?

(A) Ability to increase or decrease resources as needed

(B) Security level

(C) Cost reduction

(D) Data encryption

35. Which factor is important when evaluating cloud security?

(A) Data encryption

(B) Access Control

(C) Data encryption and Access Control

(D) Internet speed

36. Which cloud service model delivers software over the internet?

(A) IaaS

(B) PaaS

(C) NaaS

(D) SaaS

37. What is a major advantage of cloud computing?

(A) High upfront cost

(B) Cost efficiency

(C) Limited access

(D) Manual updates

38. Which of the following is a cloud provider?

(A) Amazon Web Services

(B) Windows OS

(C) MS Paint

(D) Micro Soft Web Services

39. Which cloud deployment model is owned and operated by a single organization?

(A) Private cloud

(B) Public cloud

(C) Hybrid cloud

(D) Community cloud

40. Which term refers to charging users based on usage?

(A) Subscription model

(B) Fixed pricing

(C) Pay-as-you-go

(D) Free tier

41. Which technology is the backbone of cloud computing?

(A) Virtualization

(B) Networking

(C) Internet

(D) All of the above

42. Evaluation of cloud computing mainly focuses on :

(A) Hardware design

(B) Performance and cost analysis

(C) Software installation

(D) Operating system design

43. Benchmarking in cloud computing is used to :

(A) Install software

(B) Measure system performance

(C) Remove data

(D) Manage networks

44. Which factor measures the ability of different cloud systems to work together?

(A) Interoperability

(B) Scalability

(C) Reliability

(D) Security

45. _____ is a paradigm of distributed computing to provide the customers on demand, utility based computing service.

(A) Remote Sensing

(B) Remote Invocation

(C) Cloud Computing

(D) Private Computing

46. What is the primary purpose of blockchain technology?

(A) To replace all traditional databases

(B) To centralize data storage

(C) To create cryptocurrencies

(D) To provide a secure and transparent record of transactions

47. Who introduced blockchain technology?

(A) Gavin Wood

(B) Satoshi Nakamoto

(C) Charles Hoskinson

(D) Vitalik Buterin

48. Blockchain networks are typically :

(A) Client-server

(B) Peer-to-peer

(C) Standalone

(D) Hierarchical

49. Which of the following is NOT a feature of blockchain?

(A) Decentralization

(B) Transparency

(C) Central control

(D) Immutability

50. Which industry benefits most from improved traceability and supply chain transparency using blockchain?

(A) Manufacturing

(B) Logistics

(C) Agriculture

(D) All of the above

51. When a record is submitted in a general blockchain, who can access it?

(A) Everybody

(B) Nobody

(C) Only the people involved in the transaction

(D) Only the creator

52. What does the "Grey" in Grey Model represent in the context of system analysis?

(A) The system is completely transparent

(B) The system is a complete mystery with no known data

(C) The system has partially known and partially unknown information

(D) The model is only used for "Gray" blockchains

53. Gray model is best suited for :

(A) Completely open systems

(B) Completely closed systems

(C) Semi-open systems

(D) Offline systems

54. Question : What is a major challenge in Grey Model?

(A) Infinite data availability

(B) Complete and accurate data

(C) Limited and incomplete data

(D) High-speed processing

55. Which of the following is a key feature of the RLA model?

(A) Energy inefficient

(B) Security against attacks

(C) High centralization

(D) Dependency on a single leader

56. Which of the following is NOT a feature of RLA model?

(A) Security

(B) Resilience

(C) Vulnerability increase

(D) Attack prevention

57. What is a key challenge in a multi-chain environment?

(A) Too much centralization

(B) Lack of any decentralized apps

(C) Interoperability between different chains

(D) Inability to use smart contracts

58. What is MultiChain?

(A) An open-source blockchain platform designed for private, enterprise use

(B) A cryptocurrency exchange designed for private use

(C) A smart contract language designed for private, enterprise use

(D) A public mining pool designed for private, enterprise use

59. MultiChain can be used for :

(A) Digital asset management

(B) Video streaming

(C) Web browsing

(D) File compression

60. Process mining helps organizations to :

(A) Ignore processes

(B) Optimize workflows

(C) Delete data

(D) Reduce security

61. What is a key advantage of a multi-chain architecture over a single-chain architecture?

(A) Reduced security

(B) Requirement of higher transaction fees

(C) Increased centralization

(D) Improved scalability and ability to handle specialized applications

62. Which of the following is considered a major challenge or risk when using multichain platforms?

(A) Lack of use cases

(B) High interoperability between chains

(C) Security vulnerabilities in bridges

(D) Low transaction speed

63. What is the fundamental improvement of a Blockchain over a simple Hash Chain?

(A) It is centralized for faster processing

(B) It uses SHA-256 for all transactions

(C) It distributes the hash chain across a network of nodes, ensuring decentralization

(D) It stores passwords instead of data

64. What is the primary role of a hash function in a blockchain?

(A) To encrypt transaction data for privacy

(B) To provide integrity and create unique identifiers for blocks

(C) To reduce the size of the blockchain

(D) To generate private keys

65. Open blockchain nodes are :

(A) Anonymous and decentralized

(B) Identified

(C) Permissioned

(D) Centralized

66. What is the primary goal of Machine Learning?

(A) To program a computer to perform a specific task

(B) To create a faster database system

(C) To replace human decision-making entirely

(D) To allow a system to learn from data and improve from experience

67. Which of the following is not a Machine Learning algorithm?
(A) Linear Regression
(B) K-Means
(C) Naive Bayes
(D) Bubble Sort

68. Which of the following uses labeled data?
(A) Unsupervised Learning
(B) Supervised Learning
(C) Reinforcement Learning
(D) Unsupervised and Reinforcement Learning

69. What is the defining characteristic of Supervised Learning?
(A) The model learns from a labeled dataset with input-output pairs
(B) The model learns from unlabeled data
(C) The model interacts with an environment to get rewards
(D) The model is used only for image compression

70. Which is an unsupervised algorithm?
(A) Linear Regression
(B) Logistic Regression
(C) K-Means
(D) Decision Tree

71. Which is not unsupervised learning?
(A) Clustering
(B) Association
(C) Classification
(D) Dimensionality reduction

72. Which unsupervised learning algorithm is used for outlier detection?
(A) Logistic Regression
(B) Decision Tree
(C) Support Vector Machines (SVM)
(D) Isolation Forest

73. In reinforcement learning, what does the term "exploitation" refer to?
(A) Trying new actions to gain more knowledge
(B) Maximizing immediate rewards based on current knowledge
(C) Balancing exploration and exploitation for optimal results
(D) Trying random actions to avoid bias

74. K-Means is used for :
(A) Clustering
(B) Classification
(C) Regression
(D) Prediction

75. Supervised learning is mainly used for :
(A) Clustering
(B) Prediction
(C) Pattern discovery
(D) Association

76. Unsupervised learning is used for :

(A) Prediction

(B) Classification

(C) Pattern discovery

(D) Regression

77. The first step in a machine learning process is :

(A) Model training

(B) Data collection

(C) Evaluation

(D) Deployment

78. If a dataset has missing values, which step addresses this?

(A) Feature Scaling

(B) Dimensionality Reduction

(C) Model Evaluation

(D) Data Imputation

79. What is a "Hyperparameter"?

(A) A parameter the model learns automatically

(B) A configuration set by the user before training begins

(C) The final output of the model

(D) A missing value in the dataset

80. In which type of learning does the model find hidden patterns in unlabeled data?

(A) Unsupervised Learning

(B) Supervised Learning

(C) Regression

(D) Classification

81. Which learning category is based on an agent interacting with an environment?

(A) Supervised Learning

(B) Unsupervised Learning

(C) Reinforcement Learning

(D) Semi-supervised Learning

82. Which of these is not a primary category of Machine Learning?

(A) Supervised

(B) Unsupervised

(C) Reinforcement

(D) Descriptive Programming

83. Which algorithm is typically used for Supervised Learning?

(A) K-Means

(B) Apriori

(C) Linear Regression

(D) Principal Component Analysis (PCA)

84. A "Policy" in Reinforcement Learning defines :

(A) The hardware being used

(B) The strategy used by the agent to decide the next action

(C) The total amount of data

(D) The error rate of the model

85. Which category does "Deep Learning" belong to?
(A) Only Supervised
(B) Only Unsupervised
(C) It can be Supervised, Unsupervised, or Reinforcement
(D) None of the above

86. Which category is most similar to how humans learn from experience?
(A) Reinforcement
(B) Supervised
(C) Unsupervised
(D) Descriptive

87. PCA (Principal Component Analysis) is a :
(A) Supervised Learning Algorithm
(B) Unsupervised Learning Algorithm
(C) Reinforcement Learning Algorithm
(D) Only preprocessing tool

88. If you have 10,000 photos of faces but no names attached. You want to group them by "visual similarity." Use :
(A) Supervised Learning
(B) Unsupervised Learning
(C) Reinforcement Learning
(D) Regression

89. Linear regression is used to :
(A) Classify data
(B) Cluster data
(C) Predict continuous values
(D) Reduce dimensions

90. A Gradient Descent algorithm is said to have converged when :
(A) The gradient becomes zero (or very close to zero)
(B) The number of iterations reaches 1,000 exactly
(C) The gradient becomes one (or very close to one)
(D) The model parameters reach their maximum possible values

91. How many variables are required to represent a linear regression model?
(A) 3
(B) 2
(C) 1
(D) 4

92. What is the goal of gradient descent?
(A) Reduce complexity
(B) Reduce overfitting
(C) Maximize cost function
(D) Minimize cost function

93. What happens when the learning rate is high?
(A) It always reaches the minima quickly
(B) It overshoots the maxima
(C) Most of the times, it overshoots the minima
(D) Nothing happens

94. Who is the Father of Machine Learning (ML)?

(A) Geoffrey Chaucer

(B) Geoffrey Everest Hinton

(C) Geoffrey Hill

(D) None of the above

95. Real-Time decisions, Game AI, Learning Tasks, Skill Acquisition, and Robot Navigation are applications of which of the following.

(A) Supervised Learning: Classification

(B) Reinforcement Learning

(C) Unsupervised Learning: Clustering

(D) Unsupervised Learning: Regression

96. What does the term "overfitting" refer to in machine learning?

(A) When a model performs well on the training data but poorly on new data

(B) When a model performs well on new data but poorly on the training data

(C) When a model perfectly fits the training data

(D) When a model is too simple to capture the underlying patterns

97. What is the purpose of the K-Nearest Neighbors (KNN) algorithm?

(A) Clustering data into k groups

(B) Predicting a continuous output

(C) Classifying data based on its neighbors

(D) Reducing the dimensionality of features

98. Which of the following statements is not true about K-Nearest Neighbor?

(A) It belongs to the supervised learning domain

(B) It has an application in data mining and intrusion detection

(C) It is non-parametric

(D) It is not an instance based learning algorithm

99. The primary goal of analyzing MultiChain is to :

(A) Increase mining

(B) Evaluate performance and security

(C) Delete data

(D) Reduce nodes

100. Main difference between Open blockchain and MultiChain is :

(A) Programming language

(B) Color of network

(C) Level of access control

(D) Internet speed

Rough Work

Example :

Question :

Q.1 Ⓐ ● Ⓒ Ⓓ

Q.2 Ⓐ Ⓑ ● Ⓓ

Q.3 Ⓐ ● Ⓒ Ⓓ

5. Each question carries equal marks. Marks will be awarded according to the number of correct answers you have.

6. All answers are to be given on OMR Answer Sheet only. Answers given anywhere other than the place specified in the answer sheet will not be considered valid.

7. Before writing anything on the OMR Answer Sheet, all the instructions given in it should be read carefully.

8. After the completion of the examination, candidates should leave the examination hall only after providing their OMR Answer Sheet to the invigilator. Candidate can carry their Question Booklet.

9. There will be no negative marking.

10. Rough work, if any, should be done on the blank pages provided for the purpose in the booklet.

11. To bring and use of log-book, calculator, pager & cellular phone in examination hall is prohibited.

12. In case of any difference found in English and Hindi version of the question, the English version of the question will be held authentic.

Impt. On opening the question booklet, first check that all the pages of the question booklet are printed properly. If there is any discrepancy in the question Booklet, then after showing it to the invigilator, get another question Booklet of the same series.

उदाहरण :

प्रश्न :

प्रश्न 1 Ⓐ ● Ⓒ Ⓓ

प्रश्न 2 Ⓐ Ⓑ ● Ⓓ

प्रश्न 3 Ⓐ ● Ⓒ Ⓓ

5. प्रत्येक प्रश्न के अंक समान हैं। आपके जितने उत्तर सही होंगे, उन्हीं के अनुसार अंक प्रदान किये जायेंगे।

6. सभी उत्तर केवल ओ०एम०आर० उत्तर-पत्रक (OMR Answer Sheet) पर ही दिये जाने हैं। उत्तर-पत्रक में निर्धारित स्थान के अलावा अन्यत्र कहीं पर दिया गया उत्तर मान्य नहीं होगा।

7. ओ०एम०आर० उत्तर-पत्रक (OMR Answer Sheet) पर कुछ भी लिखने से पूर्व उसमें दिये गये सभी अनुदेशों को सावधानीपूर्वक पढ़ लिया जाये।

8. परीक्षा समाप्ति के उपरान्त परीक्षार्थी कक्ष निरीक्षक को अपनी OMR Answer Sheet उपलब्ध कराने के बाद ही परीक्षा कक्ष से प्रस्थान करें। परीक्षार्थी अपने साथ प्रश्न-पुस्तिका ले जा सकते हैं।

9. निगेटिव मार्किंग नहीं है।

10. कोई भी रफ कार्य, प्रश्न-पुस्तिका में, रफ-कार्य के लिए दिए खाली पेज पर ही किया जाना चाहिए।

11. परीक्षा-कक्ष में लॉग-बुक, कैल्कुलेटर, पेजर तथा सेल्युलर फोन ले जाना तथा उसका उपयोग करना वर्जित है।

12. प्रश्न के हिन्दी एवं अंग्रेजी रूपान्तरण में भिन्नता होने की दशा में प्रश्न का अंग्रेजी रूपान्तरण ही मान्य होगा।

महत्वपूर्णः प्रश्नपुस्तिका खोलने पर प्रथमतः जाँच कर देख लें कि प्रश्नपुस्तिका के सभी पृष्ठ भलीभाँति छपे हुए हैं। यदि प्रश्नपुस्तिका में कोई कमी हो, तो कक्षनिरीक्षक को दिखाकर उसी सिरीज की दूसरी प्रश्नपुस्तिका प्राप्त कर लें।