

# JNANANPEETA DCET ACADEMY

MODEL QUESTION PAPER-1  
TIME-2:00 hr SUBJECT-DCET MM-100

1. If A is a 3x3 matrix and  $|A| = 1$ , then  $|2A|$  = ?

- a) 2
- b) 4
- c) 8
- d) 16

2. If A is a 3x3 matrix and  $|A| = 0$ , then  $|A^{-1}| = ?$

- a) 0
- b) 1
- c) -1
- d) Cannot be determined

3. If A is a 2x2 matrix and  $|A| = 1$ , then  $|$

- a) 1
- b) -1
- c) Cannot be determined
- d) None of the above

4. If A is a 3x3 matrix and  $|A| = 2$ , then  $|\text{adj}(A)| = ?$

- a) 4
- b) 8
- c) 16
- d) 32

5. If A is a 2x2 matrix and  $|A| = 3$ , then  $|A^2| = ?$

- a) 9
- b) 18
- c) 27
- d) 36

6. If A is a 3x3 matrix and  $|A| = 4$ , then  $|A^3| = ?$

- a) 64
- b) 128
- c) 256
- d) 512

**7. The equation of a straight line passing through the points (2, 3) and (4, 7) is**

- a)  $y = 2x + 1$
- b)  $y = 3x + 1$
- c)  $y = 4x + 1$
- d)  $y = 5x + 1$

**8. The slope of the line  $3x + y = 5$  is**

- a) -3
- b) -1
- c) 1
- d) 3

**9. The equation of the line passing through the point (2, 3) and making an angle of  $45^\circ$  with the x-axis is**

- a)  $y = x + 1$
- b)  $y = x - 1$
- c)  $y = x$
- d) None of the above

**10. The distance of the point (2, 3) from the line  $2x + 3y - 5 = 0$  is**

- a)  $\sqrt{13}$
- b)  $2\sqrt{13}$
- c)  $3\sqrt{13}$
- d)  $4\sqrt{13}$

**11. The value of  $\sin 30^\circ$  is**

- a)  $1/2$
- b)  $\sqrt{3}/2$
- c)  $\sqrt{2}/2$
- d) 1

**12. The value of  $\cos 60^\circ$  is**

- a)  $\sqrt{3}/2$
- b)  $1/2$
- c)  $\sqrt{2}/2$
- d) 1

**13. The value of  $\tan 45^\circ$  is**

- a) 1
- b)  $\sqrt{3}$
- c)  $\sqrt{2}$
- d)  $1/\sqrt{2}$

**14. The value of  $\sec 60^\circ$  is**

- a) 2
- b)  $\sqrt{3}$
- c)  $2\sqrt{3}$
- d)  $1/\sqrt{3}$

**15. The value of  $\csc 30^\circ$  is**

- a) 2
- b)  $\sqrt{3}$
- c)  $2\sqrt{3}$
- d)  $1/\sqrt{3}$

**16. The value of  $\cot 30^\circ$  is**

- a)  $\sqrt{3}$
- b)  $1/\sqrt{3}$
- c) 2
- d)  $\frac{1}{2}$

**17. If  $\sin A = 1/2$  and A is an acute angle, then the value of  $\cos A$  is**

- a)  $\sqrt{3}/2$
- b)  $1/2$
- c)  $\sqrt{2}/2$
- d) 1

**18. If  $\cos A = 1/2$  and A is an acute angle, then the value of  $\sin A$  is**

- a)  $\sqrt{3}/2$
- b)  $1/2$
- c)  $\sqrt{2}/2$
- d) 1

**19. The value of  $\sin (90^\circ - A)$  is**

- a)  $\sin A$
- b)  $\cos A$
- c)  $\tan A$
- d)  $\cot A$

**20. The value of  $\cos (90^\circ - A)$  is**

- a)  $\sin A$
- b)  $\cos A$
- c)  $\tan A$
- d)  $\cot A$

**21. The derivative of  $f(x) = x^2 + 3x + 2$  is**

- a)  $2x + 3$
- b)  $2x^2 + 3x + 2$
- c)  $x^2 + 2x + 3$
- d)  $x^2 + 3x + 1$

**22. The slope of the tangent to the curve  $y = x^2 + 3x + 2$  at the point (1,6) is**

- a) 2
- b) 3
- c) 4
- d) 5

**23. The area bounded by the curve  $y = x^2 + 3x + 2$  and the x-axis is**

- a)  $1/3$
- b)  $1/2$
- c)  $2/3$
- d)  $5/6$

**24. The integral of  $f(x) = x^2 + 3x + 2$  is**

- a)  $x^3 + 3x^2 + 2x + C$
- b)  $x^3 + 2x^2 + 3x + C$
- c)  $x^2 + 3x + 2x + C$
- d)  $x^2 + 3x + 2 + C$

**25. The value of the integral  $\int x^2 + 3x + 2 \, dx$  is**

- a)  $x^3 + 3x^2 + 2x + C$
- b)  $x^3 + 2x^2 + 3x + C$
- c)  $x^2 + 3x + 2x + C$
- d)  $x^2 + 3x + 2 + C$

**26. The area bounded by the curve  $y = f(x)$  and the x-axis between  $x = a$  and  $x = b$  is given by**

- a)  $\int f(x) \, dx$
- b)  $\int f(x) \, dx + \int f(-x) \, dx$
- c)  $2 \int f(x) \, dx$
- d) None of the above

**27. The value of the integral  $\int x^2 \, dx$  is**

- a)  $x^3/3 + C$
- b)  $x^3 + C$
- c)  $x^2/2 + C$
- d)  $x^2 + C$

**28. The value of the integral  $\int e^x \, dx$  is**

- a)  $e^x + C$
- b)  $e^{x/2} + C$
- c)  $e^{x/3} + C$
- d) None of the above

**29. The value of the integral  $\int \sin x \, dx$  is**

- a)  $-\cos x + C$
- b)  $\cos x + C$
- c)  $\sin x + C$
- d) None of the above

**30. The value of the integral  $\int \cos x \, dx$  is**

- a)  $\sin x + C$
- b)  $-\sin x + C$
- c)  $\cos x/2 + C$
- d) None of the above

## JNANANPEETA DCET ACADEMY

**31. Which of the following is not a method of data collection?**

- a) Observation
- b) Experiment
- c) Survey
- d) Interview

**32. Which of the following is a qualitative data?**

- a) Height
- b) Weight
- c) Gender
- d) Marital status

**33. Which of the following is a quantitative data?**

- a) Brand preference
- b) Eye color
- c) Number of children
- d) Marital status

**34. The measure of central tendency that is most affected by extreme values is**

- a) Mean
- b) Median
- c) Mode
- d) Range

**35. The measure of dispersion that is most affected by the presence of outliers is**

- a) Range
- b) Standard deviation
- c) Variance
- d) Mean

**36. The mean of a set of data is 10. The median is 8 and the mode is 6. The data set is**

- a) Skewed to the right
- b) Skewed to the left
- c) Normally distributed
- d) Cannot be determined

**37. The standard deviation of a set of data is 2. The variance is**

- a) 4
- b) 8
- c) 16
- d) 32

**38. Which of the following is not a data type in Python?**

- a) String
- b) Integer
- c) Boolean
- d) list

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**39. Which of the following is not a keyword in Python?**

- a) print
- b) if
- c) else
- d) while

**40. Which of the following is not a method of data collection?**

- a) Observation
- b) Experiment
- c) Survey
- d) Interview

**41. Which of the following is a qualitative data?**

- a) Height
- b) Weight
- c) Gender
- d) Marital status

**42. Which of the following is a quantitative data?**

- a) Brand preference
- b) Eye color
- c) Number of children
- d) Marital status

**43. The measure of central tendency that is most affected by extreme values is**

- a) Mean
- b) Median
- c) Mode
- d) Range

**44. The measure of dispersion that is most affected by the presence of outliers is**

- a) Range
- b) Standard deviation
- c) Variance
- d) Mean

## JNANANPEETA DCET ACADEMY

**45. The mean of a set of data is 10. The median is 8 and the mode is 6. The data set is**

- a) Skewed to the right
- b) Skewed to the left
- c) Normally distributed
- d) Cannot be determined

**46. The standard deviation of a set of data is 2. The variance is**

- a) 4
- b) 8
- c) 16
- d) 32

**47. Which of the following is not a Google service?**

- a) Google Search
- b) Google Maps
- c) Google Drive
- d) Google Chrome

**48. Which of the following is not a cloud computing service offered by Google?**

- a) Google App Engine
- b) Google Cloud Storage
- c) Google Cloud SQL
- d) Google Cloud Platform

**49. Which of the following is not a programming language supported by Google App Engine?**

- a) Python
- b) Java
- c) C++
- d) PHP

**50. Which of the following is not a runtime environment supported by Google App Engine?**

- a) Python 2.7
- b) Java 8
- c) Go 1.11
- d) PHP 7.2

**51. Which of the following is not a smart home device?**

- a) Smart thermostat
- b) Smart refrigerator
- c) Smart watch
- d) Smart car

**52. Which of the following is not a smart home platform?**

- a) Amazon Alexa
- b) Google Home
- c) Apple HomeKit
- d) Samsung Smart Things

**53. Which of the following is not a smart city application?**

- a) Traffic management
- b) Waste management
- c) Public safety
- d) Energy management

**54. Which of the following is not a smart city platform?**

- a) Cisco Kinetic
- b) IBM Watson IoT
- c) Microsoft Azure IoT Suite
- d) SAP HANA Cloud Platform

**55. Which of the following is not a smart farming application?**

- a) Irrigation management
- b) Crop monitoring
- c) Weather forecasting
- d) Livestock monitoring

**56. Which of the following is not a smart farming platform?**

- a) FarmBot
- b) PrecisionHawk
- c) Growlink
- d) Farmers Edge



**57. Which of the following is not an electrical safety hazard?**

- a) Live wires
- b) Grounded circuits
- c) Open switches
- d) Overloaded circuits

**58. Which of the following is the most common cause of electrical fires?**

- a) Overloaded circuits
- b) Faulty wiring
- c) Loose connections
- d) Arcing

**59. What is the unit of electrical current?**

- a) Ampere
- b) Volt
- c) Watt
- d) Ampere

**60. What is the unit of electrical potential difference?**

- a) Ampere
- b) Volt
- c) Watt
- d) Ohm

**61. What is the purpose of a fuse?**

- a) To protect against overloads
- b) To protect against short circuits
- c) To protect against ground faults
- d) To protect against all of the above

**62. What is the purpose of a circuit breaker?**

- a) To protect against overloads
- b) To protect against short circuits
- c) To protect against all of the above
- d) To protect against ground faults

**63. What is the difference between an AC motor and a DC motor?**

- a) AC motors run on alternating current, while DC motors run on direct current.
- b) AC motors have a commutator, while DC motors do not.
- c) AC motors are more efficient than DC motors.
- d) DC motors are more versatile than AC motors.

**64. What is the difference between a battery and an UPS?**

- a) A battery is a device that stores electrical energy, while an UPS is a device that provides backup power when the main power source fails.
- b) A battery is a consumable device, while an UPS is a non-consumable device.
- c) A battery is used to power devices, while an UPS is used to protect devices from power outages.
- d) A battery is a smaller device than an UPS.

**65. What is the difference between an analog and a digital device?**

- a) Analog devices represent data as continuous values, while digital devices represent data as discrete values.
- b) Analog devices are more accurate than digital devices.
- c) Digital devices are more versatile than analog devices.
- d) Analog devices are more expensive than digital devices.

**66. What is the difference between a transistor and an integrated circuit?**

- a) A transistor is used to amplify or switch signals, while an integrated circuit is used to perform complex mathematical operations.
- b) A transistor is a single electronic component, while an integrated circuit is a collection of electronic components on a single chip.
- c) A transistor is a smaller device than an integrated circuit.
- d) A transistor is a less expensive device than an integrated circuit.

**67. Why are protective devices necessary in electrical circuits?**

- a) To protect the electrical equipment from damage
- b) To protect the people from electric shock
- c) To protect the electrical installation from fire
- d) All of the above

**68. What is the function of a fuse?**

- a) To melt and break the circuit when there is an overload or short circuit
- b) To interrupt the flow of current when there is a ground fault
- c) To protect the electrical equipment from damage
- d) All of the above

**69. What is the function of a circuit breaker?**

- a) To melt and break the circuit when there is an overload or short circuit
- b) To interrupt the flow of current when there is a ground fault
- c) To protect the electrical equipment from damage
- d) All of the above

**70. What is the difference between an MCB and a MCCB?**

- a) MCBs are used for low-voltage circuits, while MCCBs are used for high-voltage circuits.
- b) MCBs are thermal-magnetic devices, while MCCBs are only thermal devices.
- c) MCBs are less expensive than MCCBs.
- d) All of the above

**71. What is an HRC fuse?**

- a) HRC fuses are high-rupturing capacity fuses.
- b) They are used in high-current circuits.
- c) They are more expensive than ordinary fuses.
- d) All of the above

**72. What is a kit kat fuse?**

- a) Kit kat fuses are cartridge fuses.
- b) They are used in low-voltage circuits.
- c) They are less expensive than HRC fuses.
- d) All of the above

**73. What is an ELCB?**

- a) ELCB stands for earth leakage circuit breaker.
- b) It is a type of circuit breaker that protects against ground faults.
- c) It is more expensive than an MCB or MCCB.
- d) All of the above

**74. Which of the following is not a core project management skill?**

- a) Communication
- b) Planning
- c) Leadership
- d) Avoiding customer complaints

**75. What is the purpose of project administration?**

- a) To ensure that the project is completed on time, within budget, and to the required quality standards.
- b) To provide support to the project team and ensure that they have the resources they need to complete the project successfully.
- c) Both A and B.
- d) All of the above

**76. Which of the following is not a phase of the project life cycle?**

- a) Inception
- b) Planning
- c) Execution
- d) Closure

**77. Which of the following is not a project planning tool?**

- a) Gantt chart
- b) Work breakdown structure
- c) Critical path method
- d) Customer complaints

**78. Which of the following is not a project management goal?**

- a) Keeping overall costs within budget
- b) Maintaining a happy and well-functioning development team
- c) Delivering the software to the customer at the agreed time
- d) Avoiding customer complaints

**79. Which of the following is not a project management best practice?**

- a) Use a project management tool
- b) Avoid customer complaints
- c) B. Communicate effectively with the project team and stakeholders
- d) Manage risk

**80. Which of the following is not a project management challenge?**

- a) Changing requirements
- b) Lack of resources
- c) Customer complaint
- d) Unexpected events

**81. Which of the following is not a project management risk?**

- a) The project will not be completed on time.
- b) The project will not be completed within budget.
- c) The project will not meet the required quality standards.
- d) Customer complaints

**82. Which of the following is not a project management issue?**

- a) A team member is not performing their tasks as expected.
- b) A key resource is not available when needed.
- c) A change in the project scope has been requested.
- d) Customer complaints

**83. Which of the following is not a project management tool for managing change?**

- a) Customer complaints
- b) Change management plan
- c) Change management committee
- d) Change management process

**84. Which of the following is not a project planning tool?**

- a) Gantt chart
- b) Work breakdown structure
- c) Critical path method
- d) Customer complaints

**85. What is the purpose of a work breakdown structure (WBS)?**

- a) To break down the project into smaller, more manageable tasks.
- b) To create a timeline for the project.
- c) To identify the project's risks.
- d) To track the project's budget.

**86. What is the critical path method (CPM)?**

- a) A method of identifying the longest path through a project.
- b) A method of scheduling the project's tasks.
- c) A method of estimating the project's budget.
- d) A method of managing the project's risks.

**87. Which of the following is not a project monitoring tool?**

- a) Earned value management
- b) Budget at completion
- c) Schedule performance index
- d) Customer complaints

**88. Which of the following is not a project control tool?**

- a) Change management
- b) Issue tracking
- c) Risk management
- d) Customer complaints

**89. Which of the following is not a project review tool?**

- a) Stage gate review
- b) Peer review
- c) Walkthrough
- d) Customer complaints

**90. Which of the following is not a project audit tool?**

- a) Financial audit
- b) Technical audit
- c) Customer complaints
- d) Compliance audit

**91. What is the purpose of project control?**

- a) To ensure that the project is completed on time, within budget, and to the required quality standards.
- b) To identify and manage risks.
- c) To communicate with stakeholders.
- d) All of the above.

**92. What is the purpose of project review?**

- a) To ensure that the project is completed on time, within budget, and to the required quality standards.
- b) To identify and manage risks.
- c) To communicate with stakeholders.
- d) To provide feedback to the project team.

**93. What is the purpose of project audit?**

- a) To ensure that the project is completed on time, within budget, and to the required quality standards.
- b) To identify and manage risks.
- c) To verify the accuracy of the project's documentation.
- d) To communicate with stakeholder

**94. What is project control?**

- a) The process of ensuring that the project is completed on time, within budget, and to the required quality standards.
- b) The process of identifying and managing risks.
- c) The process of communicating with stakeholders.
- d) All of the above.

**95. What is the purpose of project review?**

- a) To ensure that the project is completed on time, within budget, and to the required quality standards.
- b) To identify and manage risks.
- c) To communicate with stakeholders.
- d) To provide feedback to the project team.

**96. What is the purpose of project audit?**

- a) To ensure that the project is completed on time, within budget, and to the required quality standards.
- b) To identify and manage risks.
- c) To communicate with stakeholders.
- d) To verify the accuracy of the project's documentation.

**97. Which of the following is not a project control tool?**

- a) Change management
- b) Issue tracking
- c) Risk management
- d) Customer complaint

**98. What is the role of a browser's cache?**

- a) To store user preferences and data
- b) To download files from the internet
- c) To store temporary copies of web pages for faster access
- d) To clear browsing history and cookies

**99. Which browser feature allows you to synchronize your bookmarks, history, and settings across multiple devices?**

- a) Incognito mode
- b) Extensions
- c) Synchronization
- d) Developer tools

**100. Which type of server is responsible for translating domain names into IP addresses in the client-server model?**

- a) DNS server
- b) File server
- c) Web server
- d) Database server



## JNANANPEETA DCET ACADEMY

| MODEL QUESTION PAPER-1/KEY ANSWERS |   |    |   |    |   |    |   |     |   |
|------------------------------------|---|----|---|----|---|----|---|-----|---|
| 1                                  | C | 21 | A | 41 | C | 61 | D | 81  | D |
| 2                                  | A | 22 | C | 42 | C | 62 | C | 82  | D |
| 3                                  | A | 23 | D | 43 | A | 63 | A | 83  | C |
| 4                                  | B | 24 | A | 44 | A | 64 | A | 84  | D |
| 5                                  | A | 25 | A | 45 | B | 65 | A | 85  | A |
| 6                                  | A | 26 | A | 46 | A | 66 | B | 86  | A |
| 7                                  | A | 27 | A | 47 | D | 67 | D | 87  | D |
| 8                                  | B | 28 | A | 48 | D | 68 | A | 88  | D |
| 9                                  | C | 29 | A | 49 | D | 69 | B | 89  | D |
| 10                                 | A | 30 | A | 50 | D | 70 | A | 90  | C |
| 11                                 | A | 31 | D | 51 | D | 71 | A | 91  | D |
| 12                                 | B | 32 | C | 52 | D | 72 | D | 92  | D |
| 13                                 | A | 33 | C | 53 | D | 73 | A | 93  | C |
| 14                                 | A | 34 | A | 54 | D | 74 | D | 94  | A |
| 15                                 | A | 35 | A | 55 | C | 75 | C | 95  | B |
| 16                                 | A | 36 | B | 56 | C | 76 | D | 96  | D |
| 17                                 | A | 37 | A | 57 | B | 77 | D | 97  | B |
| 18                                 | A | 38 | D | 58 | A | 78 | D | 98  | A |
| 19                                 | A | 39 | D | 59 | D | 79 | B | 99  | C |
| 20                                 | B | 40 | D | 60 | B | 80 | C | 100 | A |

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