DURCET-2015 SCHEME AND SYLLABUS FOR PHD ENTRANCE EXAM (COMPUTER SCIENCE)

There will be two sections

Section-A (30 Marks)

This section consists of 30 multiple choice questions on General Awareness

Section-B (90 Marks)

This section consists of 90 multiple choice questions on subject concerned. There will be nine subjects and ten multiple choice questions from each subject.

| 1. | Programming and Data Structures | 10 |
|----|--|----|
| 2. | Computer Organization and Architecture | 10 |
| 3. | Computer Networks and Algorithms | 10 |
| 4. | Database Concepts and Data Mining | 10 |
| 5. | Software Engineering | 10 |
| 6. | Web Technologies | 10 |
| 7. | Artificial Intelligence | 10 |
| 8. | Operating System | 10 |
| 9. | Cryptography and Network Security | 10 |
| | | |

MODEL QUESTION PAPER FOR PHD ENTRANCE EXAMINATION-2015 DRAVIDIAN UNIVESITY, KUPPAM

Section-B

1.Programming and Data Structures

31. Output of the following program fragment is x = 5; y = x++; printf("%d%d", x, y);

- A. 5,5 B. 5,6 6.6
- C. 6.5 D.

32. What is the correct value to return to the operating system upon the successful completion of a program?

- A. -1 B. 1 C. 0 D. Programs do not return a value
- 33. An array of pointers is same as
 - A. Pointer to array B. Pointers to pointers
 - C. Pointer to function D. Pointer to structure

34. If an array is used as function argument, the array is passed

- A. By value By reference B. C.
 - By name D. The array cannot be used as a function argument

35. Which of the following data structure is used to represent relationship between pairs, where relationship is not hierarchical?

| A. | Graph | В. | Tree |
|----|------------|----|-------|
| C. | Hash Table | D. | Queue |

36. If a binary tree satisfies shape and order property it is known as

| A. | Binary Search Tree | B. | Sequential Search Tree |
|----|--------------------|----|------------------------|
| C. | Неар | D. | Rooted Tree |

37. The number of nodes in a complete binary tree of level 5 is

A. 15 B. 25 C. 71 63 D.

38. Binary search tree is an example of

| A. | Divide and conquer | В. | Greedy algorithm |
|----|--------------------|----|---------------------|
| C. | Back tracking | D. | Dynamic programming |

- 39. Which technology is used in optical disks?
 - Mechanical B. Electrical A. C. Electro Magnetic D. Laser
- 40. A data item that cannot be divided into sub items is known as
 - A. Primary Data Item B. Primary Key
 - C. Group Data Item Elementary Data Item D.

2.Computer Organization and Architecture

| 41.Which A. | n is the most popular medium for dire Magnetic tape | ect aco B. | cess secondary storage of a computer? Magnetic disk | | |
|---|--|---------------|--|--|--|
| A. C. | RAM | D. | ROM | | |
| 42.Intel 8 | 085 is an 8bitMicroprocessor. | | | | |
| А. | C-MOS | B. | N-MOS | | |
| C. | D-MOS | D. | TTL | | |
| 43. The d | isadvantage of hard wired control un | its wi | 1 1 | | |
| А. | Design becomes complex | B. | It requires more number of flip flops | | |
| C. | Control circuit speed does not matches with flip flops | D. | None of the above | | |
| | h type of memory chips are likely to f computers? | be us | ed in the primary storage of the future | | |
| A. | Selenium chips | B. | Optical chips | | |
| C. | Bio chips | D. | Gallium arsenide chips | | |
| 0. | | 2. | | | |
| 45. ADI | | | | | |
| A. | Add to Accumulator using carry Fla | - | B. Add to Accumulator | | |
| C. | Add Immediate data to Accumulate | or | D. Add Immediate data to Accumulator Using carry | | |
| 46. Whic | h of following register pair can be di | rectly | stored in memory? | | |
| А. | BC | B. | HI | | |
| C. | CD | D. | DE | | |
| 47. The w | word length of a CPU is defined as | | | | |
| A. | The maximum addressable memory | y size | B. The width of a CPU register | | |
| C. | The width of the address bus | | D. The number of general purpose CPU registers | | |
| 48. To pu | tt the microprocessor in the wait state | • | | | |
| A. | Lower the HOLD input | B. | Lower the READY input | | |
| C. | Raise the HOLD input | D. | Raise the READY input | | |
| 49. The h | 49. The hardware in which data may be stored for a computer system is called | | | | |
| A. | Register | B. | Memory | | |
| C. | Chip | D. | Peripheral | | |
| 50. The addressing mode used in the instruction PUSH B is | | | | | |
| A. | Direct | B. | Register | | |
| C. | Register indirect | D. | Immediate | | |
| 3.Computer Networks and Algorithms | | | | | |
| | | | | | |

51. IEEE 802.16 popularly called

| A. | Ethernet | B. | WiFi |
|----|----------|----|----------|
| C | WAAV | р | Winalaga |

C. WiMAX D. Wireless Network

52. Hackers often use data thrown in bin to get information. This is

- A. Scavenging B. Data hiding
- C. Piggybacking D. Both a and b

53. The receiver equalizer reduces delay distortions using

- A. Tapped Delay lines B. Gearshift C. Descrambler D. Difference engine
- 54. Which type of switching uses the entire capacity of a dedicated link?
 - Circuit switching B. Virtual Circuit Packet Switching A.
 - C. Datagram Packet Switching D. Message switching
- 55. On which layer of the OSI model the router configuration reside
 - Transport B. Network A.
 - C. Logical link D. Physical

56. In TCP, a unique sequence number assigned to each

- A. Byte B. Word
- C. Segment D. Message
- 57. T switch is used to
 - A. Control how messages are passed between computers
 - B. Echo every character that is received.
 - C. Transmit characters one at a time.
 - D. Rearrange the connection between computing equipments.

58. Which is reserved address for private networks?

- 150.0.0.0 to 150.255.255.255 B. 128.0.0.0 to 191.255.255.255 A.
- C. 192.168.0.0 to 192.168.255.255 D. 202.40.55.0 to 202.40.55.255

59. Start and stop bits are used in serial communication for

- Error detection Error correction A. B.
- C. Synchronization Slowing down the communication D.

60. Which of following is not a digital to analog conversion?

ASK PSK A. B. C. FSK D. AM

4.Database Concepts and Data Mining

61. Which of the following is not a DML statement?

- A. UPDATE B. COMMIT C. INSERT D. DELETE
- 62, The overall description of a database is called
 - Data definition Data manipulation A. B.
 - Data integrity Database schema C. D.

- Distinct No Duplicate None of the above Unique D. Physical level B. Logical level Conceptual level View level D. Tuple B. Attribute Entity D. Degree Data model Process model B Event model D. Customer model Summarized data B. C. Aggregate departmental data All of these D. 70. Which of the following is the advantage of data warehousing? Better enterprise intelligence B. Cost effective decision making D. All of these C. **5.Software Engineering** Top-down testing Bottom up testing B. **Big-Bang** testing Sandwich testing D. 72. Estimate of size for a project is dependent on Cost Schedule B. None of above Time D. 73. Spiral model begins with Design B.
- 74. Which is non functional software testing?
 - A. Unit testing

Coding

Performance testing C.

- B. Record based logical model
- D. None of the above
- B. Not dependency preserving
- D. None of the above
- 65. The keyword to eliminate duplicate rows from the query result in SQL is A.
 - B.
- 66. In the architecture of a database system external level is the
 - A.
 - C.
- 67. The column of a table is referred to as the
 - A.
 - C.
- 68. An entity relationship diagram is a tool to represent
 - A
 - C.
- 69. A data mart contain A.

A.

A.

A.

A.

C.

C.

C.

- De normalized data
- Business reengineering
- 71. All the modules of the system are integrated and tested as complete system in the case of
 - C.
 - **Risk** analysis
 - Customer communication D.
 - B. Black box testing
 - D. Regression testing

- Object based logical model
- 64. Every BCNF decomposition is
 - A. Dependency preserving
 - C. Need be dependency preserving
- 63. The entity relationship model comes under
 - A. C. Physical data model

| A. | | B. D | 1 5 |
|--|---|--|--|
| C. | Attributes, name and operations | D. | None of above |
| | 1 • . | | |
| 76. DFD | - | ъ | |
| A. | | B. | Flow of control |
| C. | Both a and b | D. | None of above |
| | | | |
| | sibility study should focus on | - | - |
| А. | Technical feasibility | В. | Economic feasibility |
| C. | Operational feasibilty | D. | All of these |
| - | | | |
| | OMO II estimation model is based or | | |
| А. | 1 11 | B. | Algorithmic approach |
| C. | Bottom up approach | D. | Top Down approach |
| | | | |
| 79. The r | nost desirable form of coupling | | |
| А. | Control Coupling | B. | Content Coupling |
| C. | Data Coupling | D. | External Coupling |
| | | | |
| 80. Wate | rfall model is a | | |
| А. | Linear model | B. | Iterative model |
| C. | Rapid model | D. | Interactive model |
| | | | |
| | <u>6.Web Te</u> | chno | <u>logies</u> |
| | | | |
| | | | |
| 81. The ' | \$' present in the RegExp object is cal | led? | |
| 81. The ' A. | | led? B. | metasymbol |
| | | | metasymbol None of the above |
| A. | meta | B. | • |
| A. C. | meta | B. D. | None of the above |
| A. C. | meta metacharacter | B. D. | None of the above |
| A. C. 82. How | meta metacharacter many root element can an XML docu | B. D. | None of the above have ? |
| A. C. 82. How A. | meta metacharacter many root element can an XML docu One | B. D. ument B. | None of the above have ? Two |
| A. C. 82. How A. C. | meta metacharacter many root element can an XML docu One | B. D. Iment B. D. | None of the above have ? Two As many as the memory provides |
| A. C. 82. How A. C. | meta metacharacter many root element can an XML docu One Three | B. D. Iment B. D. | None of the above have ? Two As many as the memory provides y is |
| A. C. 82. How A. C. 83. The r | meta metacharacter many root element can an XML docu One Three method or operator used to identify an type of | B. D. Iment B. D. | None of the above have ? Two As many as the memory provides y is |
| A. C. 82. How A. C. 83. The r A. | meta metacharacter many root element can an XML docu One Three method or operator used to identify an type of | B. D. Iment B. D. array B. | None of the above have ? Two As many as the memory provides y is isarray() |
| A. C. 82. How A. C. 83. The r A. C. | meta metacharacter many root element can an XML docu One Three nethod or operator used to identify an type of typeof | B. D. Iment B. D. array B. D. | None of the above have ? Two As many as the memory provides y isisarray() None of the above |
| A. C. 82. How A. C. 83. The r A. C. | meta metacharacter many root element can an XML docu One Three nethod or operator used to identify an type of typeof h tags are commonly used by search o | B. D. Iment B. D. array B. D. | None of the above have ? Two As many as the memory provides y isisarray() None of the above |
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| A. C. 82. How A. C. 83. The r A. C. 84. Whic A. C. | meta metacharacter many root element can an XML docu One Three nethod or operator used to identify an type of typeof h tags are commonly used by search of Headings | B. D. Iment B. D. array B. D. engin B. D. | None of the above have ? Two As many as the memory provides y is isarray() None of the above es? Title All of these eft margin of an element? |
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| A. C. 82. How A. C. 83. The r A. C. 84. Whic A. C. 85. Whic A. C. 85. Whic A. C. 85. Whic | meta metacharacter many root element can an XML docu One Three nethod or operator used to identify an type of type of typeof h tags are commonly used by search of Headings Paragraph h property should be used for setting indent Margin-left to make each word in a sentence start | B. D. Iment B. D. array B. D. engin B. D. the le B. D. | None of the above have ? Two As many as the memory provides y is isarray() None of the above es? Title All of these eff margin of an element? Padding-left left a capital letter? |
| A. C. 82. How A. C. 83. The r A. C. 84. White A. C. 85. White A. C. 85. White A. C. 85. White A. C. | meta metacharacter many root element can an XML docu One Three nethod or operator used to identify an type of type of typeof h tags are commonly used by search of Headings Paragraph h property should be used for setting indent Margin-left to make each word in a sentence start font-weight:bold | B. D. Imment B. D. Engine B. D. the le B. D. the le B. D. | None of the above have ? Two As many as the memory provides y is isarray() None of the above es? Title All of these eft margin of an element? Padding-left left a capital letter? text-transform:uppercase |
| A. C. 82. How A. C. 83. The r A. C. 84. Whic A. C. 85. Whic A. C. 85. Whic A. C. 85. Whic | meta metacharacter many root element can an XML docu One Three nethod or operator used to identify an type of type of typeof h tags are commonly used by search of Headings Paragraph h property should be used for setting indent Margin-left to make each word in a sentence start | B. D. Iment B. D. array B. D. engin B. D. the le B. D. | None of the above have ? Two As many as the memory provides y is isarray() None of the above es? Title All of these eft margin of an element? Padding-left left a capital letter? text-transform:uppercase |

- 75. In object oriented design of software, objects have

87. Which CSS property controls the text size?

- text-style A. B. text-size
- С. font-size D. font-style

88. What will happen if reverse() and join() methods are used simultaneously in JavaScript?

B.

- Reverses and stores in same array A.
- C. reverses

89. Do functions in JavaScript necessarily return a value ?

- A. It is mandatory B. Not necessary
- C. Few functions return values by D. default
- 90. What is FTP program used for
 - Transfer files to and from and Designing a website A. B. internet server
 - C. Connecting to the Internet D. None of the Above

7.Artificial Intelligence

- 91. Factors which affect the performance of learner system does not include
 - Representation scheme used (a)
 - (b) Training scenario
 - Type of feedback (c)
 - Good data structures (d)

92.Different learning methods does not include

- Memorization (a)
- (b) Analogy
- Deduction (c)
- (d) Introduction

93.In language understanding, the levels of knowledge that does not include

- Phonological (a)
- (b) Syntactic
- Semantic (c)
- Logical (d)

94.A model of language consists of the categories which does not include

- Language units (a)
- Role structure of units (b)
- (c) System constraints
- Structural units (d)

95.Semantic grammars

- Encode semantic information into a syntactic grammar (a)
- Decode semantic information into a syntactic grammar (b)
- (c) Encode syntactic information into a semantic grammar
- Decode syntactic information into a semantic grammar (d)

- Reverses and concatenates of array
- D. All of the mentioned

- All of the above

96.What is a top-down parser?

- (a) Begins by hypothesizing a sentence (the symbol S) and successively predicting lower level constituents until individual preterminal symbols are written
- (b) Begins by hypothesizing a sentence (the symbol S) and successively predicting upper level constituents until individual preterminal symbols are written
- (c) Begins by hypothesizing lower level constituents and successively predicting a sentence (the symbol S)
- (d) All the above.

97.Perception involves

- (a) Sights, sounds, smell and touch
- (b) Hitting
- (c) Boxing
- (d) Dancing

98. Among the following which is **not** a horn clause?

- (a) p
- (b) $\neg p V q$
- (c) $p \rightarrow q$
- (d) $p \rightarrow \neg q$

99. The action 'STACK(A, B)' of a robot arm specify to

- (a) Place block B on Block A
- (b) Place blocks A, B on the table in that order
- (c) Place blocks B, A on the table in that order
- (d) Place block A on block B

100.Machine learning is

- (a) The autonomous acquisition of knowledge through the use of computer programs
- (b) The autonomous acquisition of knowledge through the use of manual programs
- (c) The selective acquisition of knowledge through the use of computer programs
- (d) None of the above.

8.Operating Systems

- 101. The disk controller can be told to replace each bad sector logically with one of the spare sectors in the disk. This scheme is known as_____.
 - (a) Sector sparing (b) Sector slipping
 - (c) Forwarding (d) Back word replacing
- 102.Controlling the access of programs, processes or users to the resources defined by the system is known as_____.

| (a) | Prevention | (b) | Security |
|-----|------------|-----|-------------|
| (c) | Protection | (d) | Access stop |

- 103. Which of the following mechanism is used to achieve concurrency control?
 - (a) Clusters (b) Triggers
 - (c) Cursors (d) Locks.

| 104. Every process before starting execution This is known as | should know what resources are allocated to it. | | | |
|--|--|--|--|--|
| (a) Know-to-need | (b) Need-to-Know | | | |
| (c) Know about | (d) Need-to-use | | | |
| 105. The ability to execute an operation on a | n object is known as | | | |
| (a) Access Right | (b) Access Control | | | |
| (c) Domain | (d) Control Right | | | |
| 106. The time required to move the disk head | d to the desired track is known as | | | |
| (a) Access Time | (b) Track Time | | | |
| (c) Latency Time | (d) Seek Time | | | |
| 107. A distributed system is a collection of p | rocessors that do not share | | | |
| (a) CPU (b) Memory | (c) I/O devices (d) Network | | | |
| 108. The name of the file does not reveal an called | ny hint of the file's physical storage location is | | | |
| (a) Location independence | (b) Protection | | | |
| (c) Location transparency | (d) File migration | | | |
| 109. software entity running on one or more machines and providing a particular type of function to a priori unknown clients is called | | | | |
| (a) Client (b) Server | | | | |
| (c) Service (d) Process | | | | |
| 110. Which of the following mechanism is u | used to achieve concurrency control? | | | |
| (a) Clusters (b) | Triggers | | | |
| (c) Cursors (d |) Locks. | | | |
| 9.Cryptography and Network Security | | | | |
| 111. In cryptography, what is cipher?a) algorithm for performing encryptionc) both (a) and (b) | and decryption b) encrypted message d) none of the mentioned | | | |
| 112. In asymmetric key cryptography, the pr a) sender | b) receiver | | | |
| c) sender and receiver | d) all the connected devices to the network | | | |
| 113. Which one of the following algorithma) RSA algorithmc) electronic code book algorithm | is not used in asymmetric-key cryptography? b) diffie-hellman algorithm d) none of the mentioned | | | |

| 114. In cryptography, the order of the | letters in a message is rearranged by |
|--|---------------------------------------|
| a) transpositional ciphers | b) substitution ciphers |
| c) both (a) and (b) | d) none of the mentioned |

- 115. What is data encryption standard (DES)?a) block cipherb) stream cipherc) bit cipherd) none of the mentioned
- 116. Cryptanalysis is useda) to find some insecurity in a cryptographic schemec) to encrypt the data

b) to increase the speedd) none of the mentioned

117. Which one of the following is a cryptographic protocol used to secure HTTP Connection
a) stream control transmission protocol (SCTP)b) transport layer security (TSL)
c) explicit congestion notification (ECN)
d) resource reservation protocol

| 118. Voice privacy in GSM cellular telephone p | rotocol is provided by |
|--|------------------------|
| a) A5/2 cipher | b) b5/4 cipher |
| c) b5/6 cipher | d) b5/8 cipher |
| 119. ElGamal encryption system is | |

a) symmetric key encryption algorithmc) not an encryption algorithm

b) asymmetric key encryption algorithm d) none of the mentioned

120. Cryptographic hash function takes an arbitrary block of data and returnsa) fixed size bit stringb) variable size bit stringc) both (a) and (b)d) none of the mentioned