



NICHE
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ENTRANCE EXAMINATION – JULY 2016

QUESTION PAPER

PROGRAMME : Ph. D

COMPUTER SCIENCE AND ENGINEERING / COMPUTER APPLICATIONS

Time : 2 hours

Marks: 100

INSTRUCTION TO THE CANDIDATES

1. Use only Pencil to indicate your answers. Use Ball-Point only for writing Name, Register Number and Signature.
2. Darken the square completely. Mark your answers like this

1	2	3	4
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3. Part A is common to all.

Name of the Student: Programme Applied:	Register Number <table border="1" style="margin: 0 auto; width: 100%; height: 20px;"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> Exam Centre Seal										
Signature of the Student	Signature of the Invigilator										

NIUEE 2016

Part A

1. The development of a solid foundation of reliable knowledge typically is built from which type of research?
 - a. basic research
 - b. action research
 - c. evaluation research
 - d. orientational research
2. The idea that when selecting between two different theories with equal explanatory value, one should select the theory that is the most simple, concise, and succinct is known as _____.
 - a. criterion of falsifiability
 - b. critical theory
 - c. guide of simplicity
 - d. rule of parsimony
3. Research that is done to examine the findings of someone else using the "same variables but different people" is which of the following?
 - a. exploration
 - b. Hypothesis
 - c. Replication
 - d. empiricism
4. A researcher designs an experiment to test how variables interact to influence how well children learn spelling words. In this case, the main purpose of the study was:
 - a. Explanation
 - b. Description
 - c. Influence
 - d. Prediction
5. What is the key defining characteristic of experimental research?
 - a. extraneous variables are never present
 - b. a positive correlation usually exists
 - c. a negative correlation usually exists
 - d. manipulation of the independent variable
6. Which of the following includes examples of quantitative variables?
 - a. age, temperature, income, height
 - b. grade point average, anxiety level, reading performance
 - c. gender, religion, ethnic group
 - d. both a and b
7. One step that is not included in planning a research study is:
 - a. Identifying a researchable problem
 - b. A review of current research
 - c. Statement of the research question
 - d. Developing a research plan
8. Sources of researchable problems can include:
 - a. Researchers' own experiences as educators
 - b. Practical issues that require solutions
 - c. Theory and past research
 - d. All of the above
9. The feasibility of a research study should be considered in light of:
 - a. Cost and time required to conduct the study
 - b. Skills required of the researcher
 - c. Potential ethical concerns
 - d. All of the above
10. A formal statement of the research question or "purpose of research study" generally _____.
 - a. Is made prior to the literature review
 - b. Is made after the literature review
 - c. Will help guide the research process
 - d. b and c

11. Which term refers to publishing several articles from the data collected in one large study?
 - a. Duplicate publication
 - b. Partial publication
 - c. Triplicate publication
 - d. None of these
12. Which of the following is a right of each participant according to the AERA?
 - a. Deception
 - b. Utilitarianism
 - c. Freedom to withdraw
 - d. Participants have no rights
13. Which of the following is a type of criterion-related validity evidence?
 - a. Concurrent evidence
 - b. Predictive evidence
 - c. Internal consistency
 - d. Both a and b are correct answers
14. Which of the following is not a type of reliability?
 - a. Test-retest
 - b. Split-half
 - c. Content
 - d. Internal consistency
15. Which of the following types of reliability refers to the consistency of test scores over time?
 - a. Equivalent forms reliability
 - b. Split-half reliability
 - c. Test-retest reliability
 - d. Inter-scorer reliability
16. Which type of reliability refers to the consistency of a group of individuals' scores on two equivalent forms of a test designed to measure the same characteristic?
 - a. Split-half
 - b. Test-retest
 - c. Split-forms
 - d. Equivalent forms
17. _____ refers to how well the particular sample of behaviors used to measure a characteristic reflects the entire domain of behaviors that constitutes that characteristic.
 - a. Construct validity evidence
 - b. Criterion-related validity evidence
 - c. Content validity evidence
 - d. Face validity evidence
18. Which of these is not a method of data collection.
 - a. Questionnaires
 - b. Interviews
 - c. Experiments
 - d. Observations
19. Another name for a Likert Scale is a(n):
 - a. Interview protocol
 - b. Event sampling
 - c. Summated rating scale
 - d. Ranking
20. A question during an interview such as "Why do you feel that way?" is known as a:
 - a. Probe
 - b. Filter question
 - c. Response
 - d. Pilot
21. A census taker often collects data through which of the following?
 - a. Standardized tests
 - b. Interviews
 - c. Secondary data
 - d. Observations
22. In which of the following nonrandom sampling techniques does the researcher ask the research participants to identify other potential research participants?
 - a. Snowball
 - b. Convenience
 - c. Purposive
 - d. Quota
23. Which of the following is the most efficient random sampling technique?
 - a. Simple random sampling
 - b. Proportional stratified sampling
 - c. Cluster random sampling
 - d. Systematic sampling

24. Which of the following would usually require the smallest sample size because of its efficiency?
- a. One stage cluster sampling
 - b. Simple random sampling
 - c. Two stage cluster sampling
 - d. Quota sampling
25. _____ is a set of elements taken from a larger population according to certain rules.
- a. Sample
 - b. Population
 - c. Statistic
 - d. Element

Part B

26. The part of machine level instruction, which tells the central processor what has to be done, is
- a. Operation code
 - b. Address
 - c. Locator
 - d. Flip-Flop
27. Which of the following refers to the associative memory?
- a. the address of the data is generated by the CPU
 - b. the address of the data is supplied by the users
 - c. there is no need for an address i.e. the data is used as an address
 - d. the data are accessed sequentially
28. To avoid the race condition, the number of processes that may be simultaneously inside their critical section is
- a. 8
 - b. 1
 - c. 16
 - d. 0
29. A system program that combines the separately compiled modules of a program into a form suitable for execution
- a. assembler
 - b. linking loader
 - c. cross compiler
 - d. load and go
30. Process is
- a. program in High level language kept on disk
 - b. contents of main memory
 - c. a program in execution
 - d. a job in secondary memory
31. Addressing structure
- a. defines the fundamental method of determining effective operand addresses
 - b. are variations in the use of fundamental addressing structures, or some associated actions which are related to addressing.
 - c. performs indicated operations on two fast registers of the machine and leave the result in one of the registers.
 - d. all of the above
32. The strategy of allowing processes that are logically runnable to be temporarily suspended is called
- a. preemptive scheduling
 - b. non preemptive scheduling
 - c. shortest job first
 - d. first come first served
33. The LRU algorithm
- a. pages out pages that have been used recently
 - b. pages out pages that have not been used recently
 - c. pages out pages that have been least used recently
 - d. pages out the first page in a given area

34. Which of the following systems software does the job of merging the records from two files into one?
- Security software
 - Utility program
 - Networking software
 - Documentation system
35. Fork is
- the dispatching of a task
 - the creation of a new job
 - the creation of a new process
 - increasing the priority of a task
36. How many digits of the DNIC (Data Network Identification Code) identify the country?
- first three
 - first four
 - first five
 - first six
37. A station in a network forwards incoming packets by placing them on its shortest output queue. What routing algorithm is being used?
- hot potato routing
 - flooding
 - static routing
 - delta routing
38. The probability that a single bit will be in error on a typical public telephone line using 4800 bps modem is 10^{-3} . If no error detection mechanism is used, the residual error rate for a communication line using 9-bit frames is approximately equal to
- 0.003
 - 0.009
 - 0.991
 - 0.999
39. Frames from one LAN can be transmitted to another LAN via the device
- Router
 - Bridge
 - Repeater
 - Modem
40. Which of the following condition is used to transmit two packets over a medium at the same time?
- Contention
 - Collision
 - Synchronous
 - Asynchronous
41. What are the most commonly used transmission speeds in BPS used in data communication?
- 300
 - 1200
 - 2400
 - 9600
42. What is the default subnet mask for a class C network?
- 127.0.0.1
 - 255.0.0.0
 - 255.255.0.0
 - 255.255.255.0
43. Which of the following is used for modulation and demodulation?
- modem
 - protocols
 - gateway
 - Multiplexer
44. Which of the following is not a disadvantage of wireless LAN?
- Slower data transmission
 - higher error rate
 - interference of transmissions from different computers
 - All of the above
45. Your company has a LAN in its downtown office and has now set up a LAN in the manufacturing plant in the suburbs. To enable everyone to share data and resources between the two LANs, what type of device(s) are needed to connect them? Choose the most correct answer.
- Modem
 - Cable
 - Hub
 - Router
46. A report generator is used to
- update files
 - print files on paper
 - data entry
 - All of the above

47. Which of the following is not a logical data-base structure?
a. tree b. relational c. network d. chain
48. Which of the following is a database administrator's function?
a. database design b. backing up the database
c. performance monitoring d. All of the above
49. Primitive operations common to all record management systems include
a. Print b. Sort c. Look-up d. All of the above
50. Each of data files has a _____ that describe the way the data is stored in the file.
a. File structure b. Records c. Fields d. Database
51. After you _____ a record, many data management the environments require you to issue a command to save the changes you made.
a. Delete b. Update c. Sort key d. Index
52. What is the language used by most of the DBMSs for helping their users to access data?
a. High level language b. Query language
c. SQL d. 4GL
53. Data item characteristics that are important in data management include
a. punctuation b. language c. spelling d. width
54. A locked file can be
a. accessed by only one user b. modified by users with the correct password
c. is used to hide sensitive information d. both (b) and (c)
55. In SQL, which command is used to make permanent changes made by statements issue since the beginning of a transaction?
a. ZIP b. PACK c. COMMIT d. SAVE
56. System Study involves
a. study of an existing system b. documenting the existing system
c. identifying current deficiencies and establishing new goals d. All of the above
57. The primary tool used in structured design is a:
a. structure chart b. data-flow diagram
c. program flowchart d. module
58. In a _____ one module of the new information system is activates at a time.
a. System Development Life Cycle b. CASE tool
c. Phased Conversion d. Success factors
59. In Prototyping
a. BASIC is used b. COBOL is used c. 4GLs are used d. system is documented
60. The step-by-step instructions that solve a problem are called _____.
a. An algorithm b. A list c. A plan d. A sequential structure
61. Which of the following is not a factor in the failure of the systems developments projects?
a. size of the company b. inadequate user involvement.

- c. failure of systems integration d. continuation of a project that should have been cancelled
62. A Ring, refers to a record chain, the last of which refers to the first record, in the chain, is called a/an
 a. addressing b. location c. pointer d. loop
63. The primary tool used in structured design is a:
 a. data-flow diagram b. module
 c. structure chart d. program flowchart
64. A problem's _____ will answer the question, "What information will the computer need to know in order to either print or display the output times?"
 a. Input b. Output c. Processing d. Purpose
65. System Implementation Phase entails
 a. System check outs b. Pilot run
 c. Parallel runs d. All of the above
66. A default catch block catches
 a. all thrown objects b. no thrown objects
 c. any thrown object that has not been caught by an earlier catch block
 d. all thrown objects that have been caught by an earlier catch block
67. Format flags may be combined using
 a. the bitwise OR operator (|) b. the logical OR operator (||)
 c. the bitwise AND operator (&) d. the logical AND operator (&&)
68. The use of the break statement in a switch statement is
 a. optional b. Compulsory
 c. not allowed. It gives an error message d. to check an error
69. Which of the following are valid characters for a numeric literal constant?
 a. a comma b. a dollar sign (\$) c. a percent sign (%) d. None of the above
70. A C++ program contains a function with the header `int function(double d, char c)`. Which of the following function headers could be used within the same program?
 a. `char function(double d, char c)` b. `int function(int d, char c)`
 c. both (a) and (b) d. neither (a) nor (b)
71. If you design a class that needs special initialization tasks, you will want to design a(n) _____
 a. housekeeping routine b. Initialize
 c. constructor d. Compiler
72. The newline character is always included between
 a. pair of parentheses b. pair of curly braces
 c. control string d. None of the above
73. To be called object-oriented, a programming language must allow
 a. functions that return only a single value b. #include files
 c. inheritance d. All of the above
74. A function that returns no values to the program that calls it is _____

- a. not allowed in C++
c. type empty
- b. type void
d. type barren
75. If container classes are carefully constructed, then these tools are available to work with structures that are not _____
a. valid without container classes
b. programmer-defined
c. type-specific
d. public
76. Performance of a software product does not depend on
a. its maintainability
b. its throughput
c. its latency
d. its memory consumption
77. Risk evaluation for each iteration is done in
a. Waterfall model
b. iterative enhancement model
c. Boehm's spiral model
d. all the above
78. Software requirements assessment checks for
a. completeness of requirements
b. validity of requirements
c. consistency of requirements
d. all of the above
79. A context-level DFD does not contain
a. process
b. data flow
c. data store
d. external entity
80. Halstead metric is
a. the same as the token count
b. derived from the token count
c. an approximation of the token count
d. not related to the token count
81. In testing phase the effort distribution is
a. 10%
b. 20%
c. 40%
d. 50%
82. Boundary value analysis should be based on
a. programming style
b. software design
c. software requirement
d. all of the above
83. Stress testing is done
a. for boundary values
b. to hack the system
c. to determine the load under which it fails
d. to hack the system
84. Software reengineering
a. saves cost of testing
b. saves cost of maintenance
c. saves cost of development
d. creates a good impression on the customer
85. Risk in maintenance is determined by its
a. testability
b. enhanceability
c. verifiability
d. LOC
86. The model which reduces the cost of development of software is
a. waterfall model
b. prototyping
c. iterative
d. all of these
87. The enhanceability of any software indicates
a. its remaining lifespan
b. its adaptability
c. its scope of modifications
d. its risk of failure

