



ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ ਜਲੰਧਰ

PUNJAB TECHNICAL UNIVERSITY JALANDHAR

Max. Marks: 90

Time: 90 Mins.

Entrance Test for Enrollment in Ph.D. Programme

Important Instructions

- Fill all the information in various columns, in capital letters, with blue/black ball point pen.
- Use of calculators is not allowed.
- All questions are compulsory. No negative marking for wrong answers.
- Each question has only one right answer.
- Questions attempted with two or more options/answers will not be evaluated.

Stream

Applied Sciences.....

Discipline / Branch

Computer Applications.....

Name

Father's Name

Roll No.

Date: 19-11-2011

Signature of Candidate

Signature of Invigilator

Q1. Dirty bit is used to show the

- (a) Page with corrupted data
- (b) The wrong page in the memory
- (c) Page that is modified after being loaded into cache memory
- (d) Page that is less frequently accessed.

Q2. In the round robin CPU scheduling, as the time quantum is increased, the average turnaround time

- (a) Increases
- (b) Decreases
- (c) Remain constant
- (d) Varies irregularly

Q3. Resources are allocated to the process on non shareable basis in

- (a) Mutual exclusion
- (b) Hold and wait
- (c) Non preemption
- (d) Circular wait

Q4. The garbage collector

- (a) is critical for efficient virtual memory system
- (b) Prevents fragmentation from occurring
- (c) Is mostly used with fixed partition
- (d) Collects fragmented areas of memory

Q5. Unix command cd;pwd

- (a) Display the command message error
- (b) Change to directory 'pwd'
- (c) Display the path of home directory where the user has logged in
- (d) Display the contents of current directory

Q6. The lowest level of input output control consist of

- (a) Device drivers
- (b) Interrupt handler
- (c) both (a) and (b)
- (d) None of these

Q7. Access time is highest in case of

- (a) Floppy disk
- (b) Cache
- (c) Swapping devices
- (d) Magnetic disk

Q8. The most difficult problem with co-processor is

- (a) Finding suitable applications
- (b) Keeping all processors busy
- (c) Managing shared resources

(d) Cost

Q9. Viruses

- (a) Another form of computer attack is virus
- (b) Viruses are designed to spread into other programs and can wreak havoc in a system
- (c) Causing system crashes and program malfunctioning
- (d) all of these

Q10. A hardware device that is capable of executing a sequence of instruction is called

- (a) CPU
- (b) ALU
- (c) CU
- (d) Processor

Q11. How does Packet Burst affect Network performance?

- (a) It increases the packet bandwidth.
- (b) It decreases the effective size of each packet.
- (c) It increases the speed at which packets are distributed.
- (d) It distributes packets to utilize lulls in network traffic.

Q12. A partition that exists immediately above the root of another partition is called that partition's:

- (a) Parent
- (b) Master
- (c) Container
- (d) Primary

Q13. The function strcspn(s1,s2)

- (a) Finds a token separated by any of a set of characters
- (b) Searches string for any one of a set of characters
- (c) Finds the last position in s1 in which s2 appears
- (d) determines length of initial string segment made up of characters are not in specified set

Q14. Which of the following TCP/IP protocol is used for transferring electronic mail from one machine to another?

- (a) FTP
- (b) SNMP

(c) SMTP

(d) RPC

Q15. High-resolution, bit-mapped display are useful for displaying:

- (a) clearer characters
- (b) graphics
- (c) more characters
- (d) all of the above

Q16. The average number of comparisons in sequential search is:

- (a) n^2
- (b) $n(n-1)/2$
- (c) $n(n+1)/2$
- (d) $n+2/2$

Q17. What is the last DML statement processed during a commit transaction?

- (a) INSERT
- (b) UPDATE
- (c) DELETE
- (d) POST

Q18. What will be output of the following piece of Java Code?

```
byte b=0;  
b+=1;
```

- (a) Compile time error
- (b) Runtime error
- (c) The value of b will be 1
- (d) Will require a cast (byte) before 1

Q19. RS-232, RS-449, RS-530, V.24, and X.21 are examples of:

- (a) Standards of various types of transmission channels
- (b) Standards for interfaces between terminals and modems
- (c) Two methods of error detection and correction
- (d) Standards for end-to-end performance of data communications systems.

Q20. The following statement where T is true and F is false

T&&T//F&&T

- (a) is true
- (b) is false
- (c) is wrong

(d) not applicable in C language

Q21. link encryption

- (a) Is more secure than end to end encryption
- (b) is less secure than end to end encryption
- (c) cannot be used in public network
- (d) is used only to debug

Q22. The most powerful parsing method is

- (a) LL(1)
- (b) Canonical LR
- (c) SLR
- (d) LALR

Q23. Access time of symbol table will be logarithmic, if it is implemented by

- (a) Linear list
- (b) Search tree
- (c) Hash table
- (d) Self organization list

Q24. Which organization draws up standard for MODEM?

- (a) CCITT
- (b) BELL
- (c) AT and T
- (d) Hayes

Q25. Error detection at data link level is achieved by

- (a) Bit stuffing
- (b) Cyclic redundancy codes
- (c) Hamming code
- (d) Equalization

Q26. The topology with highest reliability is

- (a) Bus
- (b) Star
- (c) Ring
- (d) Mesh

Q27. Frequency of failure and network recovery time after a failure are measures of what concept of a network?

- (a) Performance
- (b) Reliability
- (c) Security
- (d) Feasibility

Q28. In token ring, when a frame reaches its destination station, then

- (a) Message is copied
- (b) Four bits in the packet are changed
- (c) Message is taken off the ring and replaced by the token
- (d) Both (a) and (b)

Q29. In an optical fiber the inner core is the cladding.

- (a) More dense than
- (b) The same density as
- (c) Less dense than
- (d) Another name for

Q30. XML

- (a) Can be used as a database
- (b) Can't be used as a database
- (c) XML is not a database, it is language
- (d) None of these

Q31. $X=at^2; y=2at$, is the parametric equation of a:

- (a) circle
- (b) rectangular hyperbola
- (c) parabola
- (d) ellipse

Q32. Which of the following backup performs a complete restore faster than the others?

- (a) Full only
- (b) Full with differential
- (c) Full with incremental
- (d) All of the above

Q33. Which of the following is not a standard synchronous communication protocol?

- (a) SDLC
- (b) PAS
- (c) SLIP
- (d) SMTP

Q34. The output of a lexical analyzer is:

- (a) Machine code
- (b) Intermediate code
- (c) A stream of tokens
- (d) A parse tree

Q35. Type checking is normally done during:

- (a) Lexical analysis
- (b) Syntax analysis
- (c) Syntax directed translation
- (d) Code optimization

Q36. A critical section is a program segment:

- (a) Which should run in a certain specified amount of time
- (b) Which avoids deadlock
- (c) Where shared resources are accessed
- (d) Which must be enclosed by a pair of semaphore operations, P and V

Q37. Special software to create a job queue is called a:

- (a) Drive
- (b) Spooler
- (c) Interpreter
- (d) Linkage editor

Q38. In which addressing mode, the effective address of the operand is generated by adding a constant value to the contents of registers?

- (a) absolute mode
- (b) indirect mode
- (c) immediate mode
- (d) Index mode

Q39. Data encryption techniques are particularly useful for:

- (a) Reducing storage space requirements
- (b) Improving data integrity
- (c) Protecting data in data communication systems
- (d) all of the above

Q40. Structured programming involves:

- (a) Functional modularization
- (b) Decentralization of program activity
- (c) Localization of errors
- (d) centralized processing

Q41. Java does not use

- (a) Preprocessor header files
- (b) Pointers
- (c) goto statement
- (d) All of these

Q42. Object oriented programming enables to

- (a) Eliminate redundant code and to extend the use of existing classes through inheritance
- (b) Have multiple objects to co-exist without any interference
- (c) Upgrade from small to large systems.
- (d) All of these

Q43. A web page is

- (a) Made up of text and HTML tags
- (b) Marked by an opening HTML tag <HTML>
- (c) Marked by a closing HTML tag </HTML>
- (d) All of these

Q44. Ready state of thread can be achieved from

- (a) Waiting state
- (b) Suspended state
- (c) asleep state
- (d) All of these

Q45. Queues serve as a major role in

- (a) Simulation of recursion
- (b) Simulation of linked list
- (c) Simulation of limited resource allocation
- (d) Expression evaluation

Q46. Which of the following sorting method is stable?

- (a) Straight insertion sort
- (b) Binary insertion sort
- (c) Shell sort
- (d) Heap sort

Q47. Which of the following parsing method handles left-recursive grammar?

- (a) Top down parsing
- (b) Bottom up parsing
- (c) Both (a) and (b)
- (d) None of these

Q48. A circuit in a connected graph which includes every vertex of the graph is called

- (a) Euler
- (b) Unicursal
- (c) Hamiltonian
- (d) Clique

Q49. Which of the following is useful in traversing a given graph by breadth first search?

- (a) Stack
- (b) Set
- (c) List
- (d) Queue

Q50. An advantages of chained hash table over the open addressing scheme is

- (a) Worst case complexity of search operation is less
- (b) Space used is less
- (c) Deletion is easier
- (d) None of these

Q51. Which normal form is considered adequate for normal relational database design?

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

Q52. The time required to search an element in a binary search tree having n elements is:

- (a) $O(1)$
- (b) $O(\log_2 n)$
- (c) $O(n)$
- (d) $O(n \log_2 n)$

Q53. Which of the following algorithm design techniques is used in finding all pairs of shortest distances in a graph?

- (a) Dynamic programming
- (b) Backtracking
- (c) Greedy
- (d) Divide and Conquer

Q54. Symbol table can be used for:

- (a) Checking type compatibility
- (b) Suppressing duplication of error messages
- (c) Storage allocation
- (d) all of the above

Q55. In C++ language, the scope-resolution operator usually:

- (a) Specifies a particular class and resolve ambiguities
- (b) Tells what base class a class is derived from
- (c) Limits the visibility of variables to a certain function
- (d) all of the above

Q56. In C++ programs, the keywords friend appears in:

- (a) The public section of a class
- (b) The private section of a class
- (c) The class allowing access to another class
- (d) all of the above

Q57. The declaration

Int (*p) (int a);

Indicates

- (a) A pointer to a function that accepts an integer argument and returns an integer
- (b) A function that accepts an integer argument and returns a pointer to an integer
- (c) A pointer to a function that accepts a pointer to an array of integers and argument and returns a pointer to an integer
- (d) A pointer to a function that accepts an argument which is a pointer to a character returns an integer quantity

Q58. What will be the output after the following program is executed?

```
#include <stdio.h>
main()
{
    int *p,q;
    q=100;
    p=&q;
    printf("%d", *p);
}
```

- (a) 1
- (b) 10
- (c) 100

(d) 10000

Q59. Turning machine (TM) is more powerful than FMS (Finite state Machine) because

- (a) Tape movement is confined to one direction
- (b) It has no finite state
- (c) It has the capability to remember arbitrarily long sequences of input symbols`
- (d) None of above

Q60. Which of the following is a dangling reference?

- (a) Accessing a variable, that is declared but not initialized
- (b) Accessing a storage that is already disposed at the request of the processor
- (c) Accessing a storage that is already disposed at the request of the user
- (d) all of the above

Q61. A primary key, if combined with a foreign key creates

- (a) Parent child relationship between table that connect them
- (b) Many to many relationship between the tables that connect them
- (c) Network model between the tables connect them
- (d) None of these

Q62. Functional dependencies are a generalization of

- (a) Key dependencies
- (b) Relation dependencies
- (c) Database dependencies
- (d) None of these

Q63. Which of the following addressing modes permits relocation without any change what's over in the code?

- (a) Indirect addressing
- (b) Indexed addressing
- (c) Base registers addressing
- (d) PC relative addressing

Q64. An indexing operation

- (a) Sorts a file using a single key
- (b) Sorts a file using two keys
- (c) Established an index for a file
- (d) Both (b) and (c)

Q65. The time required for a gate or inverter to change its state is called

- (a) Rise time
- (b) Decay time
- (c) Propagation time
- (d) Charging time

Q66. The operation which is commutative but not associative is

- (a) AND
- (b) OR
- (c) EX-OR
- (d) NAND

Q67. A toggle operation cannot be performed using a single

- (a) NOR gate
- (b) AND gate
- (c) NAND gate
- (d) XOR gate

Q68. The disadvantage of dynamic RAM over static RAM is

- (a) Higher power consumption
- (b) Variable speed
- (c) Need to refresh the capacitor charge every once in two milliseconds
- (d) Higher bit density

Q69. Memory refreshing may be done

- (a) By the CPU that contain a special regress counter only
- (b) By an external refresh controller only
- (c) Either by the CPU or by an external refresh controller
- (d) None of these

Q70. The main difference between JK and RS flip flop is

- (a) JK flip flop does not need a clock pulse
- (b) There is a feedback in the JK Flip Flop
- (c) JK flip flop accepts both input as 1
- (d) JK flip flop is an acronym of junction cathode multivibrator

Q71. The method of research reporting should be:

- (a) Ethical
- (b) Scientific
- (c) Personal
- (d) Favorable to globalization

Q72. Experimental research deals with

- (a) Variables
- (b) Controls
- (c) Scientific inferences
- (d) All of the above

Q73. Research approaches are

- (a) Long and short
- (b) Longitudinal and cross-sectional
- (c) Oblique and horizontal
- (d) None of the above

Q74. The basic need of research is

- (a) In guidance
- (b) In economic planning
- (c) In preparation of a project
- (d) In sitting in library

Q75. Action research is

- (a) An applied research
- (b) Research carried out to solve immediate problems
- (c) Research carried out to solve complex problems
- (d) All of the above

Q76. Synopsis of research is

- (a) Summary of research
- (b) Extract of research
- (c) A plan of research
- (d) Blue print of research

Q77. Which of the following research design method is used in agriculture?

- (a) Latin square design
- (b) R.B. Design
- (c) Random replication design
- (d) all of these

Q78. The ethics of research is not related to

- (a) Self interest
- (b) Scientific method
- (c) Reliability
- (d) Humanity

Q79. The research work should not influenced by

- (a) Researcher himself
- (b) His pre established assumption
- (c) Wrong calculation
- (d) Curse of some other researcher

Q80. Research is

- (a) Passive investigation
- (b) Honest investigation
- (c) Investigation for showing scholarship
- (d) All of the above

Q81. 'ibid.' page means

- (a) Same page as in earlier footnotes
- (b) Same books as in earlier footnotes
- (c) Same content as in earlier footnotes
- (d) All of the above

Q82. Generally the formulation and progress of new knowledge has been carried out through

- (a) Experimental research
- (b) Historical research
- (c) Fundamental research
- (d) None of the above

Q83. The characteristics of research is

- (a) Wisdom
- (b) Serious and intensive study
- (c) Based on standardized conclusion
- (d) All of the above

Q84. Which of the followings is non probability sampling technique?

- (a) Random sampling
- (b) Systematic sampling
- (c) Cluster sampling
- (d) Quota sampling

Q85. The steps of educational research are in jumbled form:

- (1) Statement of the problem
- (2) Title of research
- (3) Formulation of the problem
- (4) Defining problem
- (5) Selection of the problem

Select the right arrangement of the above steps.

- (a) 5,3,2,1,4
- (b) 1,2,3,4,5
- (c) 2,3,4,5,1
- (d) 5,4,3,2,1

Q86. Which of the following is purposive sampling?

- (a) Random sampling
- (b) Systematic sampling
- (c) Deliberate sampling
- (d) None of these

Q87. An independent variable that is not related to the purpose of the study, but may affect the dependent variable is called

- (a) Extraneous variable
- (b) Control variable
- (c) Experimental variable
- (d) all of these

Q88. Which of the followings is not the principle of experimental design?

- (a) Principle of replication
- (b) Principle of randomization
- (c) Principle of local control
- (d) Principle of sampling.

Q89. The process not needed in experimental design is:

- (a) Controlling
- (b) Reference collection
- (c) Replication
- (d) Manipulation

Q90. Who is regarded as father of scientific social surveys?

- (a) Booth
- (b) George
- (c) Darwin
- (d) Fisher