

OCET 2010

Code No.: 210101

Important : Please consult your Admit Card / Roll No. Slip before filling your Roll Number on the Test Booklet and Answer Sheet.

Roll No.

In Figures

In Words

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O.M.R. Answer Sheet Serial No.

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Signature of the Candidate : _____

Subject : M.Sc. (Hons. School)-Computer Science

Time : 90 minutes

Number of Questions : 75

Maximum Marks : 75

DO NOT OPEN THE SEAL ON THE BOOKLET UNTIL ASKED TO DO SO

INSTRUCTIONS

1. Write your Roll No. on the Question Booklet and also on the OMR Answer Sheet in the space provided and nowhere else.
2. Enter the Subject and Code No. of Question Booklet on the OMR Answer Sheet. Darken the corresponding bubbles with **Black Ball Point / Black Gel pen.**
3. Do not make any identification mark on the Answer Sheet or Question Booklet.
4. To open the Question Booklet remove the paper seal(s) gently when asked to do so.
5. Please check that this Question Booklet contains **75** questions. In case of any discrepancy, inform the Assistant Superintendent within 10 minutes of the start of test.
6. Each question has four alternative answers (A, B, C, D) of which only one is correct. For each question, darken only one bubble (A or B or C or D), whichever you think is the correct answer, on the Answer Sheet with **Black Ball Point / Black Gel pen.**
7. If you do not want to answer a question, leave all the bubbles corresponding to that question blank in the Answer Sheet. No marks will be deducted in such cases.
8. Darken the bubbles in the OMR Answer Sheet according to the Serial No. of the questions given in the Question Booklet.
9. Negative marking will be adopted for evaluation i.e., 1/4th of the marks of the question will be deducted for each wrong answer. A wrong answer means incorrect answer or wrong filling of bubble.
10. For calculations, use of simple log tables is permitted. Borrowing of log tables and any other material is not allowed.
11. For rough work only the sheets marked "Rough Work" at the end of the Question Booklet be used.
12. The Answer Sheet is designed for **computer evaluation**. Therefore, if you do not follow the instructions given on the Answer Sheet, it may make evaluation by the computer difficult. **Any resultant loss to the candidate on the above account, i.e., not following the instructions completely, shall be of the candidate only.**
13. After the test, hand over the Question Booklet and the Answer Sheet to the Assistant Superintendent on duty.
14. In no case the Answer Sheet, the Question Booklet, or its part or any material copied/noted from this Booklet is to be taken out of the examination hall. Any candidate found doing so, would be expelled from the examination.
15. A candidate who creates disturbance of any kind or changes his/her seat or is found in possession of any paper possibly of any assistance or found giving or receiving assistance or found using any other unfair means during the examination will be expelled from the examination by the Centre Superintendent/Observer whose decision shall be final.
16. **Telecommunication equipment such as pager, cellular phone, wireless, scanner, etc., is not permitted inside the examination hall. Use of calculators is not allowed.**

1. Which one of the following is provided by a data dictionary ?
(A) User data (B) Functional data
(C) Database structure data (D) Sorted data
2. Which one of the following is a direct benefit of database normalization ?
(A) higher query processing efficiency (B) smaller number of tables
(C) reduced I/O for most queries (D) reduced data redundancy
3. What is the result of the following SQL statement ?
*SELECT A.Employee_Name, B.Spouse_Name
FROM Employee A LEFT OUTER JOIN Spouse B
ON A.Employee_ID = B.Employee_ID*
(A) A list of all employee's names, including the name of their spouse if they have one
(B) A list of all employees that have spouses, with spouse names included in the list
(C) A list of employee's spouses
(D) Two lists : One list of employees, the other of spouses.
4. The ability to modify the conceptual schema without causing any change to the application program is known as :
(A) Physical data independence (B) Logical data independence
(C) External data independence (D) Static data
5. A field or a combination of fields that has a unique value is called :
(A) Secondary key (B) Foreign key
(C) Primary key (D) Alternate key
6. Relational operator that yields all values from all rows in a table is known as
(A) difference (B) product
(C) select (D) project
7. Referential integrity controls relationships between :
(A) attributes in a table (B) operations of an object
(C) instances of a class (D) tables in a database.
8. What will be suitable criteria that should be entered for a query to search for Employee Names beginning with M ?
(A) Start with M (B) Like M
(C) Like 'M?' (D) Like 'M*'

9. What rows will this select statement return ?

```
SELECT * FROM products WHERE ordernumber >= 1000
```

- (A) All rows in the products table whose order number is greater than or equal to 1000
- (B) All rows in the products table whose order number is less than or equal to 1000
- (C) The first 1000 rows of the product table
- (D) All rows in the products table whose order number is greater than 1000

10. A television broadcast is an example of _____ transmission.

- (A) Simplex
- (B) half-duplex
- (C) full-duplex
- (D) automatic

11. _____ is the protocol suite for the Internet which we use presently :

- (A) TCP/IP
- (B) NCP
- (C) UNIX
- (D) ACM

12. _____ switching is well suited for voice communication while _____ switching is better suited for data and other non-voice communication.

- (A) Message; circuit
- (B) Circuit; message
- (C) Packet; circuit
- (D) Circuit; packet

13. Forty-five physical channels link _____ devices arranged in a mesh topology.

- (A) NINE (9)
- (B) TEN (10)
- (C) FORTY (40)
- (D) FORTY-FIVE (45)

14. The most frequently used UTP connector is _____ .

- (A) category 5 connector
- (B) EIA 232
- (C) RJ45
- (D) JR45

15. The natural mask for class C IP address is _____ .

- (A) 255.255.255.0
- (B) 255.255.0.0
- (C) 255.0.0.0
- (D) 255.255.255.255

16. The Internet began as an experimental network called

- (A) Intranet
- (B) ARPANET
- (C) ARPA
- (D) DoDNET

17. Clock speed is measured in

- (A) Bits per second
- (B) Baud
- (C) Bytes
- (D) Hertz

18. Cache memory enhances

- (A) Memory capacity
- (B) Memory access time
- (C) Secondary storage capacity
- (D) Secondary storage access time

19. A user complains that he has created a shell script 'myuse' that will report his usage of disk space by a directory in UNIX, but when he executes the script he only receives the message : myuse : cannot execute. What is the probable cause of the error described above ?

- (A) The file 'myuse' contains syntax errors
- (B) The file 'myuse' cannot be located because the user has not set his PATH properly
- (C) The user does not have permission to read his directory
- (D) The file mode for the owner of 'myuse' is not executable.

20. Three players A, B, C are in a race. A is twice as likely to win as B and B is twice as likely to win as C. Then the probability that B wins =

- (A) $1/2$
- (B) $2/3$
- (C) $1/3$
- (D) $2/7$

21. In following Java code snippet, what will be the output of following :

```
int var 1 = 5, var 2 = 7;  
System.out.println("Result=" + var 1 * var 3);
```

- (A) Result = 35
- (B) Result = 57
- (C) Result = 3
- (D) Error

22. Consider the following segment of a Java program,

```
int num, alpha = 10;  
num = 4;  
switch (num)  
{  
case 3 : alpha++; break;  
case 4 :  
case 6 : alpha = alpha + 3;  
case 8 : alpha = alpha + 4; break;  
default : alpha = alpha + 5;  
}  
System.out.println (alpha);
```

What will the output be when the above segment is executed as a program ?

- (A) 15
- (B) 16
- (C) 17
- (D) 18

23. The region of memory sufficiently large to hold all pixels of the display is called a

- (A) Frame buffer
- (B) RAM
- (C) ROM
- (D) Cache Memory

24. Which of the following statements is correct regarding Bitmap images ?

- (A) They are based on lines and curves
- (B) They are best for real-world images like Photography and Painted pictures
- (C) They have a small data size
- (D) One does not need to compress the file for transferring.

25. is a process model used to show the flow of data through a system and the work or processing performed by the system :

- (A) Document Flow Diagram
- (B) Data Flow Diagram
- (C) Entity Relationship Diagram
- (D) Use Case Diagram.

26. Consider the following two relations :

A (Students)

St_Id	Name	Address
1000000004	Ratan	Mumbai
1000000001	Mahesh	Gangtok
1000000008	Babita	Delhi
1000000002	Samir	Indore

B

St_Id	Name	Address
1000000001	Mahesh	Gangtok
1000000002	Samir	Indore
1000000004	Ratan	Mumbai
1000000008	Babita	Delhi

Applying a certain SQL statement to relation A gives relation B. Which of the following statements could this SQL statement be ?

- (A) SELECT * FROM Students ORDER BY St_Id;
- (B) SELECT * FROM Students ORDER BY Name;
- (C) SELECT * FROM Students ORDER BY St_Id DESC;
- (D) SELECT * FROM Students ORDER BY Name DESC;

27. Consider the code snippet given below :

```
<HTML>
<BODY>
& lt H1 & gt Hello BIT & lt H1 & gt
</BODY>
</HTML>
```

Which of the following is correct in relation to the above code snippet ?

- (A) Hello BIT is displayed as the output with H1 font.
- (B) Hello BIT </HTML> ; is displayed as the output with H1 font.
- (C) </HTML> ; is displayed as the output with default font.
- (D) <H1> Hellow BIT <HI> is displayed as the output.

28. When you are creating a structure in C/C++, you need to use the keyword

- (A) structure
- (B) object
- (C) struct
- (D) record

29. $54 _ 7 = 5$. Which arithmetic operator can replace the blank to make the statement correct ?

- (A) - (B) /
(C) % (D) *

30. What is the output of the following code in C ?

```
for (int i = 0; i < 10; i++)  
{cout << i% 2 << " " ;}
```

- (A) 0 1 2 3 4 5 6 7 8 9 (B) 0 2 4 6 8 10 12 14 16 18
(C) 10101010101 (D) 10 10 10 10 10

31. In C++, if a catch statement is written to catch exception objects of a base class type, it can also catch all _____ derived from that base class.

- (A) Exceptions for objects (B) Objects of classes
(C) Arguments (D) Errors

32. The design of classes in a way that hides the details of implementation from the user is known as :

- (A) Encapsulation (B) Information Hiding
(C) Data Abstraction (D) Reusability

33. Can two classes contain member functions with the same name ?

- (A) No.
(B) Yes, but only if the two classes have the same name
(C) Yes, but only if the main program does not declare both kinds
(D) Yes, this is always allowed.

34. What is printed when the following sample code of C is executed ?

```
char *ptr;  
char my String = "abcdefghijklmnop";  
ptr = myString;  
printf ("ptr=%s/n", ptr+5);  
printf ("ptr = %s", ptr);
```

- (A) ptr = fgijklmnop (B) ptr = fgijklmnop
ptr = fgijklmnop ptr = abcdefghijklmnop
(C) ptr = efghijklmnop (D) ptr = efghijklmnop
ptr = abcdefghijklmnop ptr = efghijklmnop

35. How many times will the “while” body be executed in the same code above ?

```
int ch = 10;
int ci = 15;
while (ch > ci)
{
cout << ch << endl ;
++ ci; -- ch ;
```

- (A) 0 (B) 1
(C) 2 (D) 3

36. What standard include file is needed to use the exit () function ?

- (A) None (B) Stdlib.h
(C) stdio.h (D) std.h

37. The processing speed of different computers is compared using :

- (A) RPM (B) GHz
(C) MIPS (D) CPS

38. Who is associated with the development of ‘C’ language ?

- (A) Niklaus Wirth
(B) Donald Knuth
(C) Dennis M Ritchie
(D) Charles Babbage.

39. Boolean expression for NAND gate with two inputs x and y can be written as :

- (A) $x - y$ (B) $\overline{x + y}$
(C) $\overline{x} + \overline{y}$ (D) $xy + \overline{xy}$

40. Two’s complement of 1011.01 is :

- (A) 0100.10 (B) 0100.11
(C) 1011.10 (D) 0100.01

41. A friend function can be used to :

- (A) avoid arguments between classes
(B) allow access to classes whose source code is unavailable
(C) allow one class to access an unrelated class
(D) increases the versatility of an overload operator

42. In TCP, which layer is not present ?

- (A) physical layer (B) data link layer
(C) transport layer (D) session layer

43. The digit F in Hexadecimal system is equivalent to _____ in decimal system.

- (A) 16 (B) 15
(C) 17 (D) 8

44. The output of a _____ gate is only 1 when all of its inputs are 1 :

- (A) NOR (B) XOR
(C) AND (D) NOT

45. $11001_2 - 10001_2 =$

- (A) 10000 (B) 01000
(C) 00100 (D) 00001

46. Which is correct :

- (A) $A.A=0$ (B) $A+1=A$
(C) $A+A=A'$ (D) $A'.A' = 0$

47. The basic storage element in a digital system is

- (A) flip flop (B) counter
(C) multiplexer (D) encoder

48. $AB + AB' =$

- (A) A (B) B
(C) 1 (D) 0

49. In UNIX, which command is used to sort the lines of data in a file in reverse order

- (A) sort (B) sh
(C) st (D) sort -r

50. The commonly used UNIX commands like date, ls, cat etc. are stored in

- (A) /dev directory (B) /bin directory
(C) /tmp directory (D) /unix directory

51. In UNIX, which command is used to change the protection mode of files starting with the string *emp* and ending with 1, 2 or 3 ?

- (A) $Chmod u+x emp[1-3]$ (B) $Chmod 777 emp^*$
(C) $Chmod u+r ??? emp$ (D) $Chmod 222 emp ?$

52. The variables which can be accessed by all modules in a C program, are known as

- (A) Local variables (B) Internal variables
(C) External variables (D) Global variables.

- 53. Which data structure is needed to convert infix notations to postfix notations ?**
- (A) Branch (B) Queue
(C) Tree (D) Stack
- 54. Consider a linked list of n elements. What is the time taken to insert an element after an element pointed by some pointer ?**
- (A) $O(1)$ (B) $O(\log_2 n)$
(C) $O(n)$ (D) $O(n \log_2 n)$
- 55. A characteristic of the data that binary search uses but the linear search ignores is the**
- (A) Length of the list (B) Order of the list
(C) Maximum value in the list (D) Mean of the data value
- 56. A sort which compares adjacent elements in a list and switches where necessary is a**
- (A) Insertion sort (B) Heap sort
(C) Quick sort (D) Bubble sort
- 57. An incremental backup**
- (A) Should be done each month (B) Uses more tapes
(C) Saves all files (D) Saves only files that have recently changed
- 58. A system program that sets up an executable program in main memory ready for execution is**
- (A) Assembler (B) Linker
(C) Loader (D) Compiler
- 59. Trojan-Horse programs**
- (A) Are legitimate programs that allow unauthorized access
(B) Do not usually work
(C) Are hidden programs that do not show up on the system
(D) Usually are immediately discovered.
- 60. A page fault**
- (A) Is an error in a specific page
(B) Occurs when a program accesses a page of memory
(C) Is an access to a page not currently in memory
(D) Is a reference to a page belonging to another program
- 61. Which of the following software cannot be categorized as application software :**
- (A) Word processing (B) Spreadsheet
(C) MS-DOS (D) Database management system
- 62. What is the purpose of keeping electronic devices such as computer, laptop etc. on sleep mode ?**
- (A) Backup (B) Reduce Power Consumption
(C) Improve download speed (D) Improve display quality

- 63. A temporary storage area, attached to the CPU, for I/O operations is a**
- (A) Channel (B) Buffer
(C) Register (D) Core
- 64. The ability of a word processing system that fits whole words on any line**
- (A) Micro spacing (B) Word wrap
(C) Clip art (D) Reformatting
- 65. What is the correct HTML for creating a hyperlink ?**
- (A) `abc`
(B) `abc`
(C) `abc`
(D) `<a>http://www.abc.com`
- 66. My Pentium 4 computer has 128 MB memory. To what memory does this refer ?**
- (A) Read only memory (ROM) (B) Random access memory (RAM)
(C) External memory (D) Cache memory
- 67. What is the correct HTML tag for inserting a line break ?**
- (A) `<lb>` (B) `
`
(C) `<break>` (D) `<line>`
- 68. How can you open a link in a new browser window ?**
- (A) `` (B) ``
(C) `` (D) ``
- 69. Inside which HTML element do we put the JavaScript ?**
- (A) `<js>` (B) `<javascript>`
(C) `<script>` (D) `<scripting>`
- 70. Which Javascript function do you use to find the number with the highest value of x and y ?**
- (A) `ceil (x, y)` (B) `Math.ceil (x, y)`
(C) `Math.max (x, y)` (D) `top (x, y)`
- 71. Visual Basic uses an object called _____ to hold your table.**
- (A) Record (B) RecordSet
(C) File (D) Table

72. Which of the following animations cannot be done in PowerPoint ?

- (A) bullet list, revealed one bullet point at a time
- (B) clip art - Fly in from the bottom
- (C) table, revealed row by row
- (D) chart, revealed by series

73. In MS-Excel, what displays the contents of the active cell ?

- (A) Namebox
- (B) RowHeadings
- (C) Formulabar
- (D) Taskpane

74. Several views are available in MS FrontPage. Which one of the following is NOT a valid view ?

- (A) Design View
- (B) Folders View
- (C) Navigation View
- (D) Web Server View

75. What is the correct CSS syntax for making all the <p>elements bold ?

- (A) p{font-weight:bold}
- (B) <p style="font-size:bold">
- (C) p {text-size:bold}
- (D) <p style="text-size:bold">

ROUGH WORK

ROUGH WORK

Panjab University, Chandigarh
OCET-2010
FINAL ANSWERS / KEY
Subject: MSc(HS)(Computer Science)

1	2	3	4	5	6	7	8	9	10
C	D	A	B	C	X	D	X	A	A
11	12	13	14	15	16	17	18	19	20
A	D	B	C	A	B	D	B	D	D
21	22	23	24	25	26	27	28	29	30
X	C	A	B	B	A	X	C	C	X
31	32	33	34	35	36	37	38	39	40
A	A	D	B	A	B	C	C	C	B
41	42	43	44	45	46	47	48	49	50
C	D	B	C	B	B	A	A	D	B
51	52	53	54	55	56	57	58	59	60
A	D	D	A	B	D	D	C	A	C
61	62	63	64	65	66	67	68	69	70
C	B	B	B	C	B	B	A	C	C
71	72	73	74	75					
B	C	C	D	A					

Note: An 'X' in the key indicates that either the question is ambiguous or it has printing mistake. All candidates will be given credit for this question