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Rathnavali Balika Vidyalaya - Gampaha

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Second Term Test - 2022 **Grade 12**

Information and Communication Technology - I **2 Hours**

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1. The correct order of data processing life cycle is indicated by,
   1) Data processing, Data collecting, Data storing, Output data, Data validation
   2) Data collecting, Data processing, Data storing, Data validation, Output data
   3) Data collecting, Data validation, Data processing, Output data, Data storing
   4) Data validation, Data collecting, Data storing, Data processing, Output data
   5) Data validation, Data collecting, Data processing, Data storing, Output data

2. Which of the following is/are true about data and information?
   A. Data are Qualitative/ Quantitative variables that can be used to develop into ideas or analytical conclusions.
   B. Facts derived from a study can be considered as information and it is always a result of a process and subject to become high valuable with the time.
   C. Information is always an output of a system but sometimes can be fed as an input to another system too.

   1) A only
   2) B only
   3) A and B only
   4) A and C only
   5) All A,B,C

3. This volatile device is a part of the CPU that act as a buffer between the physical memory and the processor when running applications of the computer and it improves processor performances, what is this device?

   1) RAM
   2) ROM
   3) L1 cache
   4) Registers
   5) Virtual memory

4. Consider the following types of memory.

   A. Read Only Memory
   B. Hard disk
   C. Register memory
   D. Flash memory
   E. RandomAccess memory

   Which of the above are considered as non-volatile memory?

   1) A,B,C only
   2) A,B,D only
   3) C,E only
   4) C,A only
   5) C,D,E only

5. Which of the following statement is *true*?
    1) ENIAC was the first electronic digital computer designed by Charles Babbage
    2) Vacuum tube invented by Gottfried Wilhelm LeibnizThe automatic sequence controller (Mark 1) was the first automatic computer invented by Professor Howard Aiken
    3) In second generation Integrated circuits were used as the fundamental building blocks.
    4) The ULSI technology is used in fourth generation.

6. Consider the following statements.
    A. The most expensive computer memory. B. The memory with the highest Access speed.

    C. The memory with the smallest capacity.

    The above characteristics indicate which of the following memories?

    1) Register Memory
    2) RAM
    3) Cache memory
    4) Flash memory
    5) ROM

7. Consider the following statements.
    A. Project involving a large number of interconnected computers to solve a complex problem.
    B. Divides a large problem into smaller units and solves those smaller problems simultaneously.
    C. Several processes run concurrently.

    Which of the following answers about the above statements is incorrect?

    1) A grid computing feature.
    2) A & C are parallel computing features.
    3) C is a parallel computing feature.
    4) B and C are grid computing features.
    5) B is a parallel computing feature.

8. Consider the following statements regarding software licenses.
    A. Ownership of Licensed Software is granted to Customer.
    B. Hides the source codes of proprietary software.
    C. Open source software allows modification and redistribution.

    Which of the following answers about the above statements is *correct?*

    1) A and B only
    2) B and C only
    3) B only
    4) C only
    5) All A,B,C

9. Which of the following is the sequence of steps related to the fetch execution cycle used in program execution?

    A. Fetching the next instruction from main memory.
    B. Encoding instructions
    C. Decoding instructions
    D. Execution of instructions

    1) A,B and C
    2) A,B and D
    3) A,C and D
    4) B,C and D
    5) A,B,C and D

10. Which of the following statements is true regarding the concept of *cloud computing?*

A. Ability to use software installed on client computers without installing software on personal computers.
B. Increased efficiency.
C. A pay-as-you-go option is available.
D. Defining an environment required for software development.

1) A only 2) A&B only 3).A,B & C only 4) A,B & D only 5) All

11. Which one is the incorrect statement regarding multi-core processor?

1) A multi-core processor can do more work as compared to a single-core processor.
2) In multi-core processors, when one piece of software fails, the others remain unaffected.
3) Even if the software is running on multiple cores, it will communicate with one another.
4) In multi-core CPUs the power consumption is eventually minimized, resulting in less battery utilization.
5) Data takes less time to reach its destination since both cores are integrated on a single chip.

12. Online office software belongs to:

1) worldwide web 2) Internet 3) Iaas 4) Saas 5) Paas

13. The characters in the table below are presented using ASCII character encoding systems.

DECIMAL	CHARACTER
71	G
114	r
101	e
110	n
73	I
67	C
84	T
10	Linefeed/New Line
32	Space

Accordingly, indicate how the following word is represented by the ASCII coding system. This word ends with the (line feed) attribute.

Green ICT

1)	71	114	101	101	110	73	67	84	10	
2)	71	114	101	101	110	32	73	67	84	
3)	71	114	101	101	110	32	73	67	84	10
4)	10	32	71	114	101	101	110	73	67	84
5)	71	114	101	101	110	32	73	67	84	

14. What is the equivalent decimal value for 111011011_2 ?

1) 475_{10} 2) 237 3) 733 4) 865 5) 575

15. What is the equivalent Hexadecimal value for octal $\mathbf{4275_8}$?

1) BD_{16} 2) $8BD_{16}$ 3) $8AD_{16}$ 4) $7BE_{16}$ 5) BC_{16}

16. What is the correct answer when the octal numbers $\mathbf{71_8 + 35_8}$ are added?

1) 71_8 2) 126_8 3) 106_8 4) 54_8 5) 45_8

17. Which of the following decimal value is equivalent for the 8-bit two's complement binary number 11111111 ?

1) -255 2) +255 3) -1 4) -2 5) -126

18. What is the binary representation of $\mathbf{9.25_{10}}$?

1) 11100111.01 2) 00001001.01 3) 00001001.10
4) 10001001.10 5) 10001001.01

19. $\mathbf{5D_{16} + 10111_2 =}$

1) 73_8 2) 75_{16} 3) 116_8 4) 162_8 5) 164_8

20. What is the most significant digit (MSD) and the least significant (LSD) of the 057.26?

1) 5 and 6 2) 7 and 2 3) 0 and 6 4) 7 and 6 5) 0 and 2

21. Which of the following represents one's complement of **1**, if an integer represented by 8 bits?

1) 00000001 2) 11111110 3)11111111 4) 00000000 5) 10101010

22. What is the maximum number of characters can be represented by EBCEDIC coding system?

1) 128 2) 8 3) 256 4) 16 5) 7

23. Answer for $010110_2 - 01011_2$ is,

1) 001011_2 2) 101011_2 3) 001100_2 4) 1001001_2 5) 001001_2

24. What is the correct answer for the Bitwise operator 0001011 **XOR** 0111101?

1) 0100110 2) 1011001 3) 1111001 4) 0110110 5) 0010110

25. An example of Distributive law is:

1) A+0=0+A 2) 1 .A=A.1 3) A +(B + C) = (A + B) + C
4) A + BC= (A + B) (A + C) 5) A + B = B + A

26. Which of the following statements is correct about sequencial circuits

1) used to create Memory units 2) Previous outputs are taken into account for subsequent outputs.

3) Answers 1 and 2 above are correct 4) Previous outputs are not considered for subsequent outputs

5) Only current inputs are considered for subsequent outputs

27. Which of the following gates are considered as universal gates?

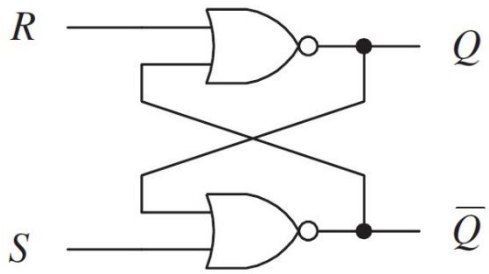
A – NAND B- NOR C- NAND, NOR D- NOT, AND, OR

1) A only 2) B only 3) C only 4) D only 5) C and D only

28. When the Boolean Expression A + A (A+C) + AC is simplified using Boolean rules, the resulting expression is:

1) 1 2) 0 3) A 4) C 5) A + C

29.



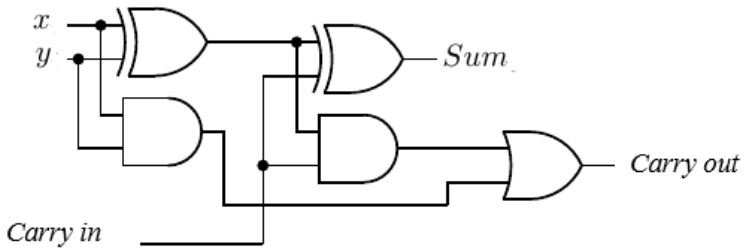
In the above circuit, if R and S are 1 and 0 respectively and the previous output is 0, the next output is,

1) 0 2) 1 3) Qt 4) Indeterminate 5) 1 or 0

30. If only full adders are used to add **11011 + 11101** , the number of Full Adder circuits required to add these two binary numbers is:

1) 2 2) 3 3) 4 4) 5 5) 6

31.



The correct statement(s) regarding the above circuit is:

A. This circuit represents a full adder.
B. This circuit is designed using two half adders and an OR gate.
C. This circuit can add only two bits.

1) A only 2) B only 3) A and B only 4) B and C only 5) A and C only

• Consider the truth table below to answer question nos. **32 and 33**

A	B	C	F
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

32. The expression/expressions equivalent to the output of the above truth table are:

A- (A+B+C) . (A+B+C') . (A+B'+C) . (A'+B+C)

B- A'BC + AB'C +ABC' +ABC

C – ((A+B+C) . (A+B+C') . (A+B'+C) . (A'+B+C))'

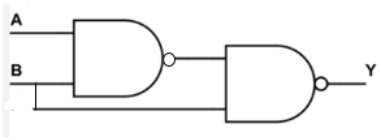
1) A only 2) B only 3) A and B only 4) B and C only 5) All A,B C

33. When the expression obtained for the output of the above truth table is minimized using a K-map, the obtained POS expression is:

1)AB+BC +AC 2) AB+BC 3) (A+C).(A+B).(B+C) 4) AB 5) (A+B).(B+C)

34. Boolean expressions for SUM and CARRY OUT of a full adder are respectively

1)AB + BC_{in} + $C_{in}A$, A + B + C
2) AB + BC_{in} + $C_{in}A$, A + B + C
3) A $\oplus$ B $\oplus$ C , AB + BC_{in} + $C_{in}A$
4) A $\oplus$ B $\oplus$ C , AB + BC_{in} + $C_{in}A$
5) None of the above

35. 

In the above logic circuit, if A=0, (AB)'=1 and Y=0 then the value of B will be:

1) 0 2) 1 3) 1 or 0 4) The value of A 5) All of the above

36. Among the following gates, which gate/gates can represent the NOT operation?

1) AND 2) NAND 3) NOR 4) OR 5) NAND , NOR

37. The Boolean expression that exactly represents the output of an XOR gate is
1) A'B'+AB' 2) A'B'+AB 3) AB+(AB)' 4) A'B+AB' 5) (A'B')' + AB'

38. Which scheduling algorithm is responsible to change process state form new state to ready state?

1)Long term scheduler 2) Midterm scheduler 3) Process swapping Scheduler

4) Short term Scheduler 5) CPU Scheduler

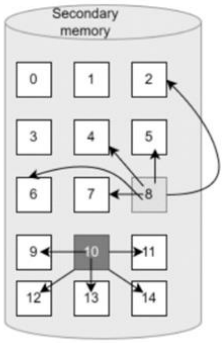
39. ……. is happen with hardware or software interruption or in generally without any interruption. Fill in the blank with most suitable term.

1)Process transition 2) Blocking 3) Mapping 4) Swapping 5) Process Termination

40. Which of the following operating systems is most suitable for *Air traffic control systems*?

1) Single User – Multi Tasks 2) Single User – Single Task 3) Multi User – Multi Tasks
4) Real Time operating system 5) Real Time – Single user

41. The file allocation method shown in the figure below could be?



1) Contiguous allocation
2) Link allocation
3) Index allocation
4) NTFS
5) FAT

42. What is/ are the file allocation method/s with sequential access?

A. Contiguous allocation **B.** Link allocation **C.** Index allocation

1) Only A 2) Only B 3) Only A &B 4) Only B &C 5) All A,B &C

43. What is/are the possible contents of a file block used in storing a file?

A. File data. **B**. Address of the next block which is read next
C. Information indicating that the file is closed

1) Only A 2) Only B 3) Only A &B 4) Only B &C 5) All A,B &C

44. A minor action that changes the sequence of operations of a process is called …….

1) Context switching 2) Process state 3) Interrupt 4) Scheduling 5) send (Dispatcher)

45. What is/ are the content/s of process control block?

A.Process Id **B**.Process state **C**.Input /output information

1) Only A 2) Only B 3) Only A &B 4) Only B &C 5) All A,B &C

46. On a single-processor computer, the operating system stopped the execution of process A and started process B. What is the best term to describe this event?

1) Process Control Block 2) Context Switching 3) Interrupt
4) Scheduling 5) Spooling

47. What is the state and the location of the ready state process, which is allow to allocate space for higher priority process?

1) New state, Virtual Memory 2) Ready suspend state, RAM
3) Ready Suspend state, Virtual Memory 4) Block Suspend state, Virtual Memory
5) Block state, RAM

48. A 4-bit word addressable computer virtual memory address is 16 bits long and 5 bits are reserved for the page number. How many pages can exist on this computer?

1)4 2) 5 3) 16 4) 32 5)64

49. Which of the following statements about virtual memory technology is/are correct?

A.A main memory is divided into pages and Virtual memory is divided into frames.

B. A page table is used to store mappings between pages and frames.

C.Programs with a capacity greater than the main memory capacity can be kept open.

1) Only A 2) Only B 3) Only A &B 4) Only B &C 5) All A, B &C

50. The main memory capacity of a byte addressable computer is 8GB. If the capacity of a page on that computer is 4KB, how many frames are there on that computer?

1) 210 2) 211 3) 221 4)231 5) 233