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Third Term Evaluation Test - 2023				
Grade 12				
Information and Communication Technology - I			Time- 02 Hours	
<small>Rathnavali Balika Vidyalaya - Gampaha. Rathnavali Balika Vidyalaya - Gampaha. Rathnavali Balika Vidyalaya - Gampaha. Rathnavali Balika Vidyalaya - Gampaha.</small>				

Select the most suitable answer

1. Which one is correct regarding big data
 - 1) Big data can be used to identify the customers who are going to cut off from the business
 - 2) Big data can contain only unstructured data
 - 3) Data analyzing tools such as SPSS ,excel can be used in analyzing big data
 - 4) Volume Velocity and Value can be considered as 3 V s of big data
 - 5) None of the above

2. Which of the following statements are true?

a-android is an example for open source system software

b-BIOS is a program which is stored in firmware

c- Web browsers are used to access world wide web and it's a utility software

 - 1) Only a and c are correct
 - 2) Only b and c are correct
 - 3) Only a and b are correct
 - 4) Only a and c are correct
 - 5) All are correct

3. The world's first storage program Computer "EDSAC" was made
 - 1) Von Neumann
 - 2) Maurice Wilks
 - 3) Pro Howard Aiken
 - 4) Ada Augusta
 - 5) Charles Babbage

4. Which of the following device is capable of input ,process and output?
 - 1) Barcode Reader
 - 2) Multimedia projector
 - 3) Automatic teller machine
 - 4) Touch sensitive screen
 - 5) None of the above

5. Among given factors what will be the least significant action to improve the performance of processor?
 - 1) Using a processor with high clock speed
 - 2) Increasing the capacity of main memory
 - 3) Using high capacity secondary storage
 - 4) Using a processor with high word size
 - 5) Using cache memory with high capacity

6. Which statement is correct regarding fetch decode execute cycle

- a. Program counter contains the next instruction to be executed
- b. Instructions which were brought from main memory are decoded by the Control unit
- c. The value of Program counter updates in each and every cycle of fetch decode execute cycle

- 1) Only a is correct
- 2) Only b is correct
- 3) Only a and b are correct
- 4) Only b and c are correct
- 5) All are correct

7. which is incorrect regarding data and information?

- 1) Data of CCTV coverage and weather forecast report can not be considered as semi structured data
- 2) Good will of an organization can be considered as qualitative data and no of customer ratings received for the organization can be considered as discrete quantitative data
- 3) Information is not always in structured format
- 4) The value of information is at the maximum point when the time is zero.
- 5) There is no possibility for information to be data at anytime

8. Which of the following statement is incorrect?

- 1) Data access speed of cache memory is high and it's a volatile memory
- 2) Main memory is used when a file saved in a hard disk is reedited
- 3) Main memory capacity is directly affected to the computer's speed
- 4) All the files in main memory are always stored in hard disk too
- 5) Cost per bit of cache is higher than Main memory

9. Select the correct statement regarding legal and ethical issues of ICT

- a- Illegal copying and distribution of software can be considered as plagiarism
- b- Quoting can be considered as fair use of Plagiarism
- c- Sharing of friend's photos in social media without knowing her can be considered as cyber crime

- 1) a only
- 2) b only
- 3) c only
- 4) a and c only
- 5) b and c only

10. Which of the following storage media devices are in the descending order of cost per bit ?

- 1) Register Memory ,Cache memory,Random Access memory ,Compact Disk, Hard Disk
- 2) Register Memory ,Random Access Memory ,Hard Disk ,Cache Memory
- 3) Register Memory , Random Access Memory, Hard Disk,compact Disk
- 4) Register Memory ,Cache Memory ,Hard Disk ,Random Access Memory
- 5) Hard Disk, Random Access Memory, Cache Memory, Register Memory

11. What is the correct binary number that is equivalent to the decimal 17.75?
- 1) 10011.10 2) 11101.011 3) 10001.11 4) 1001.10 5) 10101.110
12. Find the two's complement representation of decimal 19 in a computer that uses 8-bit register?
- 1) 0001 0011 2) 1110 1100 3) 1110 1101 4) 0000 1011 5) 1110 1111
13. Which of the following decimal value is equivalent for the 8-bit two's complement binary number 1001 0010?
- 1) 120 2) -110 3) 110 4) -120 5) 111
14. Which of the following represents one's complement of decimal 21, if an integer represented by 8 bits?
- 1) 0000 0101 2) 0001 0111 3) 1110 1010 4) 0001 0101 5) 1110 0101
15. An instruction reference displayed as hexadecimal AF8. What would that reference be in decimal form?
- 1) 2808 2) 2010 3) 1208 4) 11280 5) 28010
16. A command can be used to display a text file in its binary form. Assume a certain file consists of the following text. Each clause ends with the Line feed attribute.
- Save!
- Using the data in the tables given below, select the correct output given when the command is executed on the above file.
- 1) 1101010 1010000 0100000 1110111 0100000 0001010 0100001
- 2) 1101000 1010000 0100000 1110111 0100000 0100001 0001010
- 3) 1101010 1110101 0100000 1110111 0100000 0001010 0100001
- 4) 1101000 1010000 1111001 1110111 0100000 0100001 0001010
- 5) 1101000 1010000 1111001 1110111 0100000 0001010 0100001

Character	Line feed	space	!	a	A	b	e
Binary Value	0001010	0100000	0100001	1010000	1110101	1110 110	1110111
Character	v	w	V	S	s		
Binary Value	0100000	1010111	1111001	1101000	1101010		

17. Consider the following statements on the coding systems used to represent data in computers.
- A. Languages such as French and Japanese can be used in computers using these codes.
- B. In this coding system 16 bits were used to represent one code.

C. This coding system can be referred as a standard in the world.

Which of the above clauses is the most suitable for the following coding scheme?

- 1) BCD 2) EBCDIC 3) ASCII 4) UNICODE 5) ENGLISH

18. Consider the following statements on ways to represent integers in computers.

- A. It has two ways of representing zero.
B. Cannot perform basic arithmetic operations correctly using addition
C. Simple hardware can be designed because the concept is simple.

Which method is mentioned in the above clauses?

- 1) Sign magnitude method
2) One's Complement
3) Two's Complement
4) Both Sign magnitude method and One's Complement
5) Both One's Complement and Two's Complement

19. What is the possible result of performing bitwise XOR operation between the following binary numbers P and Q?

P – 1010 1111 Q- 1010 1010

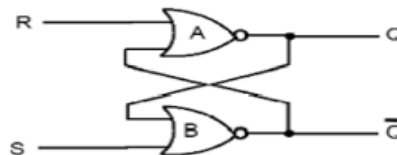
- 1) 0000 0101 2) 1010 1010 3) 1111 0001 4) 1010 1111 5) 0000 1111

20. What is the equivalent Hexadecimal value for octal 237?

- 1) A9 2) 9F 3) 28 4) 4F 5) BF

21. What is the value of the output Q if s=1 and R=1 and the previous output is 1

- 1) Equal to the value of R
2) Equal to the value of S
3) Not stable
4) 0
5) 1



22. What will not be the output X of the given circuit

- 1) $(A \cdot B' + B \cdot A')'$ 2) $AB + A'B'$ 3) $(A \cdot B)' + (A' \cdot B')'$
4) $(A + B') \cdot (A' + B)$ 5) All Incorrect

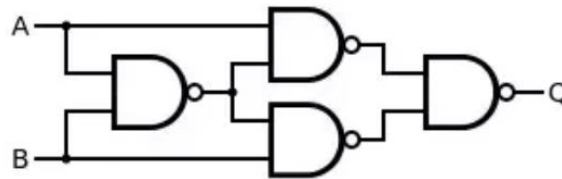
A	B	X
0	0	1
0	1	0
1	0	0
1	1	1

23. X is a Boolean Variable. If $X+X=F$,What will be the value of F?

- 1)1 2)0 3)X 4)X' 5)2X

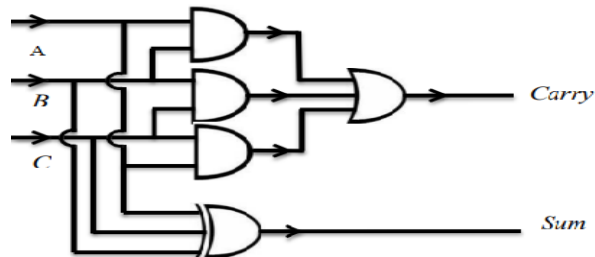
24.What is the single gate equivalent to the following logic circuit ?

- 1) XOR
2) XNOR
3) NOR
4) OR
5) AND



25. If the sum and carry out of the following circuit is 1 and 0 ,what will be the values of A,B,C?

- 1) 1,1,1
2) 1,1,0
3) 1,0,0
4) 0,0,0
5) All of the above



26. Which may be the minimum number of basic logic gates needed to design the logic circuit which is able to get the output equivalent to the Boolean expression $A.B.C'+A.B'+(A.B)'$

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

27.What will be the values of A,B and C if the output of the logic gate is 0?

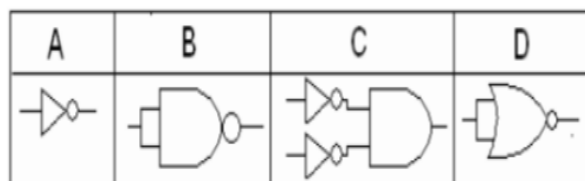
- a. A=0,B=0,C=0
b .A=0,B=0,C=1
c .A=1,B=1,C=1



- 1) a only 2) b only 3) a and b only
4) All correct 5) All incorrect

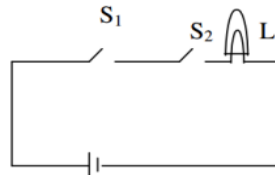
28. Which of the following represents the Boolean NOT?

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



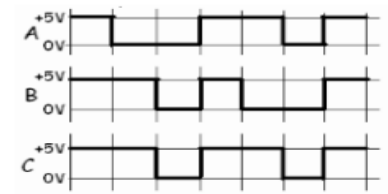
29. What is equivalent to the logic of the given electric circuit ?

- 1) XOR gate
- 2) OR gate
- 3) NOR gate
- 4) AND gate
- 5) NAND gate



30. What is the Boolean expression equivalent to output c according to the following diagram?

- 1) $A.B$
- 2) $A.B'$
- 3) $A+B$
- 4) $(A.B)'$
- 5) $(A+B)'$



31. A computer with 8GB of physical memory has 512 memory banks. What is the capacity of one block of memory in megabytes (MB)?

- 1) 16 MB
- 2) 8 MB
- 3) 4 MB
- 4) 32 MB
- 5) 64 MB

- The block size of a disk is 8KB. A part of the File Allocation table (FAT) of that disk is as follows in a certain case. That part also shows the blocks of the findArea.py file.

FAT

400	402
401	400
402	404
403	401
404	-1

Notes –

- i. The last category of a file is indicated by -1.
- ii. The directory entry of a file Indicates the first block number of the file

32. Which of the following shows the directory information of the findArea.py file and the amount of disk space allocated for that file respectively?

- 1) 400, 32 KB
- 2) 400, 40 KB
- 3) 402, 40 KB
- 4) 403, 40 KB
- 5) 401, 35KB

- Consider the following statements to answer the questions 33 to 35

- A - The length of a virtual memory address in a certain computer is 16 bits
- B - The length of a physical memory address in the above computer is 18 bits
- C - That above mentioned computer's physical memory has 32 frames.

33. How many bits are used for the offset of a virtual memory address and a physical memory address in the above computer?

- 1) 5 bits
- 2) 13 bits
- 3) 15 bits
- 4) 10 bits
- 5) 11 bits

34.The number of pages in the virtual memory of the above computer is,

- 1) 64 pages 2) 7 pages 3) 8 pages 4) 16 pages 5) 32 pages

35.The total number of memory addresses in physical memory is

- 1) 18 2) 2^{16} 3) 16 4) 16^2 5) 2^{18}

36.Among the following statements, the function/functions of a computer operating system is/are:

A – Swapping the processes between main memory and virtual memory.

B- Maintaining Page Tables and Process Control Blocks (PCB) for each process.

C- Maintain a single common page table and single common PCB to each operation.

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

37.In a time-sharing operating system, when the time slot assigned to a process completes, the process transitions from its current state to which state?

- 1) Suspend state 2) Terminate state 3) Ready state
4) Blocked state 5) Swapped out & Waiting state

38.Consider the following statements regarding file allocation methods.

A. The size of the file should be known at the time of creation

B. It is difficult to extend a file

C. External fragmentation does not occur

D. It takes less time to access a file

Which of the above is correct regarding contiguous file allocation method?

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

39.Which of the following statement is false according to the seven-state transitive diagram?

- 1) A process is in the terminate state when it is successfully executed and completed.
2) A process becomes blocked due to input/output delay.
3) A process enters the new state after the run state.
4) A process in the new state can become swapped out & waiting state.
5) A process in the swapped out and blocked state may become swapped out and waiting state.

40.Which of the following operating systems is suitable for a Tsunami Warning System?

- 1) Multitasking Operating Systems 2) Multithreading Operating Systems
3) Multiprocessing Operating Systems 4) Real Time Computing Systems
5) Multi User Operating Systems

41.What kind of transmission medium is most appropriate to carry data in a computer network that is exposed to electrical interferences?

- 1) Unshielded twisted pair 2) Shielded twisted pair 3) Optical fiber
4) Coaxial cable 5) Microwave

42.The IP network 192.168.50.0/24 is to be divided into 10 equal sized subnets. Which of the following subnet masks can be used for the above requirement?

- 1) 198.168.50.240 2) 255.255.255.240 3) 255.255.0.0
4) 255.255.255.192 5) 255.255.255.0

43.Which of the following cannot be used as a medium for 802.3 Ethernet?

- a. A thin coaxial cable b. A twisted pair cable c. A microwave link
d. A fiber optical cable e. A Bluetooth link

- 1) b only 2) c and e only 3) a and b only 4) a,b and d 5) a, b and e

44. In specific, if the systems use separate protocols, which one of the following devices is used to link two systems?

- 1) Repeater 2) Gateway 3) Bridge 4) Hub 5) Router

45.Which of the following is false with respect to TCP?

- 1) A Connection-oriented protocol
2) TCP doesn't support Broadcasting.
3) It is a Transport layer protocol
4) It is faster
5) Can guarantee delivery of data to the destination router

46. The IP packets are packed into frames in _____ layer?

- 1) Datalink 2) Physical 3) Network 4) Both a and b 5) Both a and c

47.In a star topology message transmission in a hub will be _____

- 1)Unicast 2)Broadcast 3)Multicast 4)unicast or broadcast 5)broadcast or Multicast

48.Which of the following bit has an error if odd parity is used?

	Data	Parity bit
A	100000	0
B	100100	0
C	110011	1
D	111111	1
E	110100	1

- 1) A only
2) B only
3) A and B only
4) B and E only
5) A, B and E only

49.Consider the statements given regarding MAC address.

- A. The MAC address is a string of usually six sets of two digits or characters, separated by colons.
B. MAC addresses are very useful in diagnosing network issues, such as problems with IP address.
C. A MAC address is given to an adapter when it is manufactured.

What is/are the correct statement(s) regarding MAC address?

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

50. What is the protocol used when the main server sends mail to another mail server?

- 1) FTP 2) SMTP 3) POP 4) TCP/IP 5) MIME