Bandaranayake College Gampaha
Grade 12 Test – January - 2022
Information & Communication Technology

Name: …….

2 hours

Answer All Questions

1) A …… on motherboard is used to expand the functionality of a computer and ……. provide a connection point for small specialized electronic parts called chips. Which of the following pair is the most appropriate to fill in the blank in the above statement respectively?

    1) bus and clock
    2) clock and RAM
    3) RAM and slot
    4) slot and socket
    5) socket and slot

2) …… is a distributed architecture of large numbers of computers connected to solve a complex problem and ……. is a type of computation in which many programs or processes are done simultaneously. Which of the following pair is the most appropriate to fill in the blank in the above statement respectively?

    1) Grid computing and Cloud computing
    2) Ubiquitous computing and Parallel computing
    3) Grid computing and Parallel computing
    4) Mobile computing and Parallel computing
    5) Quantum computing and Grid computing

3) Keeping Basic Input Output System settings for the booting procedure is a main use of ……. memory of a personal computer? Which of the following is the most appropriate to fill in the blank in the above statement?

    1) CMOS
    2) RAM
    3) ROM
    4) Cache
    5) None of the above

4) "With the Corona pandemic employees of most of the organizations performs their duties from home." Which of the followings best describes the above statement?

1) Social networking
2) Telecommuting
3) Instant messaging
4) Office automation
5) Blogging

5) Consider the following statements about Static Random-Access Memory (SRAM):

A. Periodic refreshing is required for SRAM.
B. Registers in the processor are made of SRAMs.
C. Cache memories are made of SRAMs.
D. Memory density of SRAM is higher than that of DRAM.
E. Memory cell of SRAM is made up with a flip-flop.

Which of the above statements is/are correct?

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

6) Which one of the following statements is/are correct?
A. Von Neumann proposed the stored program concept first.
B. Charles Babbage invented the Analytical Engine.
C. Lady Ada Augusta is considered as the first computer programmer.
D. John Presper Eckert is one of the principal inventors of the Electronic Numerical Integrator and Computer (ENIAC).

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

7) Which of the following is not a typical use of the Random-Access Memory (RAM) of a personal computer?

1) Keeping data for processing.
2) Holding instructions for operations.
3) Providing storage for operating system.
4) Retaining information for output.
5) Keeping the BIOS program for boot-up.

8) Computerized medical imaging technique that uses high frequency sound waves and their echoes of transmitted pulses are called

1) CAT scans
2) CT scans
3) PETT scans
4) Ultrasound scans
5) X-ray images

9) Consider the following statements about the Internet:

A. The Internet is a global network of networks.
B. People and organizations, who are connected to the Internet can access its massive store of shared information.
C. W3C is in charge of the Internet.
D. Data can be download only with File Transfer Protocol (FTP).
E. Anybody can publish information or create new services on the Internet.

Which of the above statements are correct?

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

10) Which of the following hardware components will lose data when the power to a computer switched off?

A. Registers
B. Cache memory
C. Main memory
D. ROM
E. CMOS

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

11) The binary number equivalent to the 28_{10} is

1) 000111
2) 011100
3) 011011
4) 101011
5) 111010

12) $C1A_{16} + 4A3_{16} =$

1) 523_{16}
2) FBD_{16}
3) FBB_{16}
4) OBC_{16}
5) $10BC_{16}$

13) Represent of 6_{10} and -9_{10} in 8-bit Two's complement forms are

1) 00000110 and 11110111 respectively
2) 11111011 and 11110111 respectively
3) 00000101 and 10001001 respectively
4) 00000101 and 11110110 respectively
5) 11111011 and 11110110 respectively

14) $6A6_{16} + 100_{10} =$

1) $70A_{16}$
2) 615_{10}
3) 509_{10}
4) $50B_{16}$
5) $65A_{16}$

15) What is the binary representation of 29.25_{10}?

1) 1110011101
2) 00011101.01
3) 0000100101
4) 1000100101
5) 10001001.01

16) Consider the following three numbers in decimal, octal and hexadecimal notations, respectively.

A. 227_{10}
B. 343_{8}
C. $E3_{16}$

Which of the above is/are equivalent to 11100011_{2} in binary notation?

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

17) Which of the following represents respectively the bitwise AND operation and bitwise OR operation of the two binary numbers 01010101 and 10101010?

1) 00000000 ,00001111
2) 11001100, 00000000
3) 11110000, 00000000
4) 00000000,11111111
5) 11111111, 00000000

18) Which of the following is true about 2's complement?

1) Used only when we do not add or subtract the data.
2) They are used in analog to digital conversions.
3) They have limited use as they require complicated arithmetic circuits.
4) Simpler design in hardware due to simpler concept.
5) Makes it possible to build low-cost, high-speed hardware to perform arithmetic operations

19) Which statements is/are correct about UNICODE?

A. Need twice memory to store ASCII characters
B. ASCII has its equivalent within Unicode
C. Represents most written languages in the world
D. Not Standardized

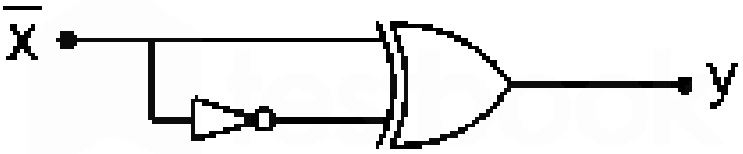
1) A,B and D only
2) A, B and C only
3) B, C and D only
4) C only
5) All A, B, C and D

20) Which statement is/are correct about Floating Point number representation?

A. Performance good.
B. No need to rely on additional hardware or software logic.
C. Greater range of numbers is represented.
D. More storage space needed.
E. Slower processing times.

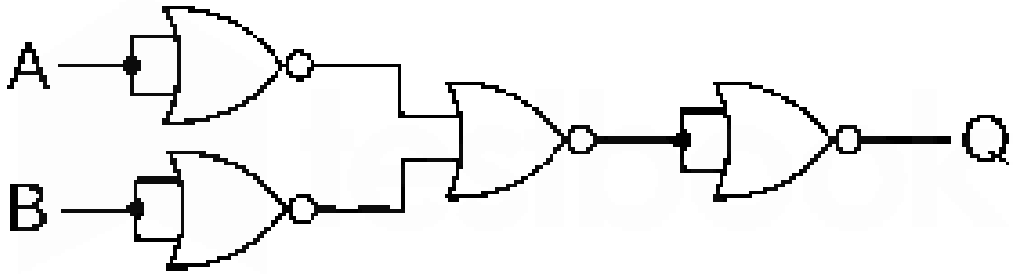
1) A and B only
2) C, D, and E only
3) D only
4) C only
5) All A, B, C, D and E

21) The output Y of the logic circuit given below is:



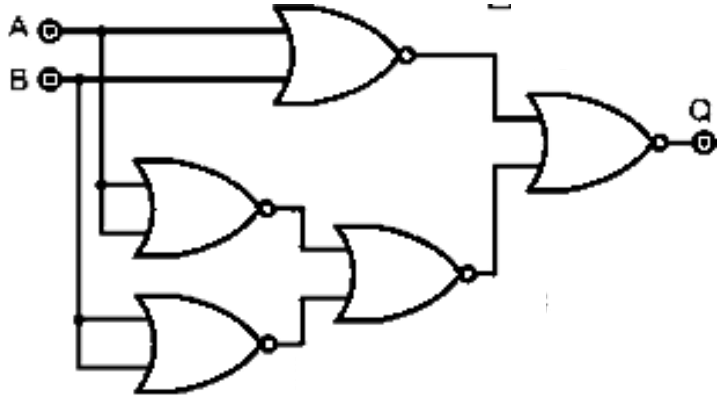
1) 1
2) 0
3) X
4) X'
5) None of the above

22) The output of logic circuit given below represents ……... gate.



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

23) The output of the logic circuit given below represents …….. gate.



1) NAND
2) NOR
3) XOR
4) XNOR
5) AND

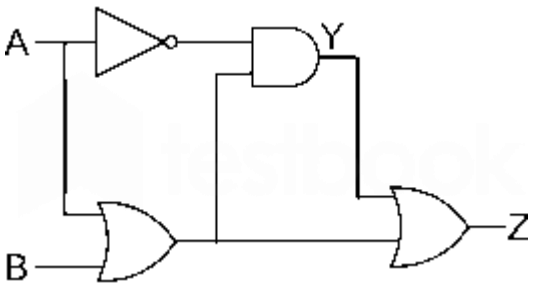
24)The Boolean expression AB + AC'+ BC simplifies to

1) BC + AC'
2) AB + AC' +B
3) AB + AC'
4) AB +BC
5) AB + (AC)'

25)The minimum number of NAND gates required to realize AB + AB'C + AB'C' is

1) 3
2) 2
3) 1
4) 0
5) 4

26)If A=1, B=1, what will be the values of Y and Z?



1) Y = 0, Z = 0
2) Y = 1, Z = 0
3) Y = 0, Z = 1
4) Y = 1, Z = 1
5) None of the above

27)The difference between half adder and full adder is _____

1) Half adder has two inputs while full adder has four inputs
2) Half adder has one output while full adder has two outputs
3) Half adder has two inputs while full adder has three inputs
4) All of the Mentioned
5) None of the above

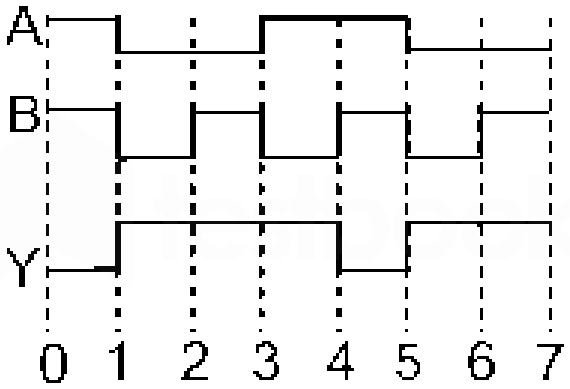
28)The S-R flip-flop (latch flip-flop) is an example of:

1) Combinational circuit
2) Synchronous sequential circuit
3) One – bit memory element
4) One-clock delay element
5) None of the above

29) Which one of the following correctly describes the distributive law?

1) A+B)(C+D)=AB+CD
2) (A+B).C=AC+BC
3) (AB)(A+B)=AB
4) (A.B)C=AC.AB
5) All of the above

30)This is the waveform of a gate. There are two inputs A and B and one output Y. Identify the Logic Gate based on the output waveform:



1) XOR Gate
2) AND Gate
3) NAND Gate
4) NOR Gate
5) XNOR Gate

31) In modern operating systems, the …… scheduler determines the transition of processes between the ready state to the running state.

1) Mid-term
2) Long-term
3) Very long-term
4) Very short-term
5) Short-term

32) If all processes in memory are blocked for I/O and then the memory is full. hence processor would become idle. Then an operating system, moving a process from the main memory to the secondary storage in order to bring in another process to the main memory is called ……..

1) Demand Paging
2) Context Switching
3) Swapping
4) Interrupting
5) Scheduling

33) Which of the following is/are an information stored in a Process Control Block (PCB) of the operating system?

A. Free disk slots (free disk blocks that could be utilized by the process)
B. Memory management information for the process
C. Program counter (address of the next instruction to be executed for the process)
D. Process identification number (unique identifier for the process)
E. Process state (e.g. Blocked, Ready etc.)

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

34) The Operating System (OS) is another program that runs on the computer that has some special responsibilities. Which one is not an important responsibility of the OS?

1) Memory management
2) file management
3) input/output management
4) Process management
5) Backup management

35) Sharing a single microprocessor among number of application programs using …… . Which is the most suitable term for the blank to complete above statement?

1) Multi-user processing
2) Context switching
3) Multiprocessing
4) Batch processing
5) Online processing

36) The type of operating system that is most suitable for an automated missile guidance system is

1) Multi-user multi-tasking
2) Single-user multi-tasking
3) Real time
4) Single-user single-tasking
5) Multi-threading

37) Which one is not a advantage of creating more than one partition in a hard disk?

1) Ability to retrieve files efficiently.
2) Keeps Important Files Safe in Case Your Computer Fails
3) Organizing Files is Made Easier
4) Network access speed becomes high
5) More Than One Partition Improves Performance

38) Which statement is/are correct about type of processes?

A. Processor Bound Processers spend more time for using processor than doing I/O.
B. POS System in Supermarket is example for I/O Bound Processers.
C. Preemptive Processers can be interrupted, suspended while executing and resumed later.
D. Non – Preemptive Processers cannot be interrupted and continue until processes complete its execution or blocked by itself.
E. Non – Preemptive Processers can be found in real time processes.

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

39) Which is incorrect characteristic of Multi Programmed Batch System?

1) The central theme of modern Operating System.
2) Introduced in 3rd Generation of computer to minimized the processor idle time during I/O.
3) Memory is partitioned to hold multiple programs.
4) OS switches processor from one program to another after a certain time quantum.
5) When current program doing I/O, OS switches processor to execute another program in memory.

40) Which of the following statement is/are correct about Paging?

A. Occasionally there can be internal fragmentations occur.
B. No external fragmentations occur.
C. When a page is no longer needed, move it back to disk.

1) A and B only
2) B only
3) C only
4) All A, B and C
5) None of the above

41)Internet is a

1) Collection of WANS
2) Network of networks
3) Collection of LANS
4) Collection of identical LANS and WANS
5) All of the above

42)The time required for a bit to travel from source to destination is known as

1) Latency
2) Propagation time
3) Delay
4) Transmission time
5) Round Trip Time

43)How many layers does OSI Reference Model has?

1) 4
2) 5
3) 6
4) 7
5) 8

44)The physical layer concerns with

1) Bit – by – bit delivery
2) Process to process delivery
3) Application to application
4) Byte by Byte
5) None of the mentioned

45)Which transmission media has the highest transmission speed in a network?

1) Coaxial cable
2) Twisted pair cable
3) Optical fiber
4) Electrical cable
5) None of the above

46) Bits can be send over guided and unguided media as analog signal by

1) Digital modulation
2) Amplitude modulation
3) Frequency modulation
4) Phase modulation
5) None of the above

47) You have an interface on a router with the IP address of 192.168.192.10/29. What is the broadcast address the hosts will use on this LAN?

1) 192.168.192.15
2) 192.168.192.31
3) 192.168.192.63
4) 192.168.192.127
5) 192.168.192.16

48) What is the subnetwork address for a host with the IP address 200.10.5.68/28?

1) 200.10.5.56
2) 200.10.5.32
3) 200.10.5.64
4) 200.10.5.0
5) 200.10.5.63

49) You have a network with a subnet of 172.16.17.0/22. Which is the valid host address?

1) 172.16.17.1 255.255.255.252
2) 172.16.0.1 255.255.240.0
3) 172.16.20.1 255.255.254.0
4) 172.16.18.255 255.255.252.0
5) 172.16.18.255 255.255.255.0

50) The network address of 172.16.0.0/19 provides how many subnets and hosts?

1) 7 subnets, 30 hosts each
2) 8 subnets, 8,190 hosts each
3) 8 subnets, 2,046 hosts each
4) 7 subnets, 2,046 hosts each
5) 8 subnets, 2,096 hosts each