

HLS & SCB SBU**Question Set – 5**

Q. 1) The given truth table represents which gate

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	1

- (a) NOR gate
- (b) NAND gate
- (c) Exclusive OR
- (d) Exclusive NOR

Q. 2) The base of the number system for the addition operation $25 + 15 = 43$ to be true is

(a) 5

(b) 6

(c) 7

(d) 8

Q. 3) A J-K flip-flop has $t_{pd} = 15$ ns, the largest MOD counter that can be constructed from cascading these FF_S and still operating upto 10 MHz is

(a) 128

(b) 64

(c) 256

(d) 32

Q. 4) NMI stands for

(a) Non mask interface

(b) Non-maskable interrupt

(c) Non-mask interaction

(d) None of these



Q. 5) Convert the decimal fraction number 0.8125 into its binary equivalent.

(a) 0.1111

(b) 0.111

(c) 0.0011

(d) 0.1101

Q. 6) How many $16\text{ K} \times 1$ bit RAM chips are needed to provide a memory capacity of $128\text{ K} \times 1$ byte?

(a) 32

(b) 128

(c) 8

(d) 64



Q. 7) What is the correct answer of the given statements in the given order?

I. Gate in which output of logical gate is high when all inputs are high is _____

II. Half of byte is known as _____

III. A flip-flop whose output follows the input when triggered is _____

- (a) NOR gate, byte, S - R flip-flop
- (b) NAND gate, bit, T - flip-flop
- (c) OR gate, nibble, T - flip-flop
- (d) AND gate, nibble, D - flip-flop

Q. 8) What is the full form of DCTL in logic family?

- (a) Direct - circuit transistor logic
- (b) Direct - coupled transistor logic
- (c) Diode - coupled transistor logic
- (d) Direct - circuit threshold logic

Q. 9) A product of sum (POS) form of logic function consist of only _____ while a sum of product (SOP) form of logic function consist of only _____.

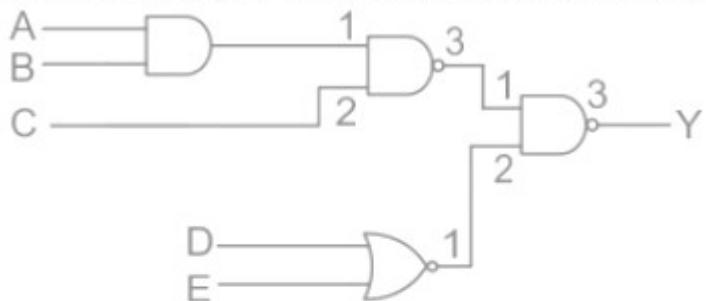
- (a) maxterms; miniterms
- (b) miniterms; maxterms
- (c) maxterms; maxterms
- (d) miniterms; minitersm

Q. 10) Which of the following is the fastest of all saturated logic families? It is also used in SSI and MSI ICs.

- (a) DCTL
- (b) TTL
- (c) I²L
- (d) RTL



Q. 11) The output Y of the circuit shown in the figure is



(a) $\overline{A + B + C} + \overline{DE}$

(b) $\overline{ABC} + D + E$

(c) $ABC + \overline{D + E}$

(d) $ABC + D + E$

Q. 12) Asynchronous counters are also known as _____.

(a) VLSI counters

(b) square counters

(c) SSI counters

(d) ripple counters

Q. 13) Which of the following IC logic families has minimum value of fan-out?

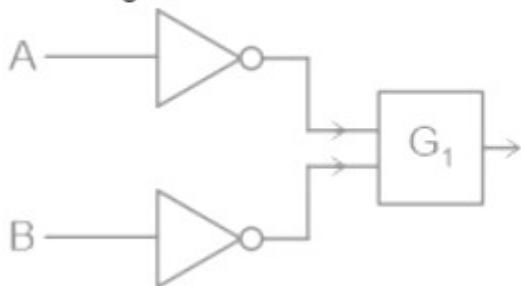
- (a) ECL
- (b) CMOS
- (c) Low power Schottky TTL
- (d) Standard TTL

Q. 14) Which of the following condition a D-flip-flop is said to be in a transparent condition?

- (a) Output is LOW
- (b) Output is HIGH
- (c) Output follows clock
- (d) Output follows input



Q. 15) In the figure shown, the output Y has to be AB then which of the following is G₁?



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

Q. 16) The binary equivalent of octal number 627 is:

- (a) 111010110
- (b) 110010110
- (c) 110010111
- (d) 011010111

Q. 17) When both the inputs of a latch are high, the output is unpredictable. What is this condition called?

- (a) Bistable
- (b) Indeterminate
- (c) Inactive
- (d) No change

Q. 18) Which of the following relate to the duality theorem?

- (a) $A \cdot A = A$
- (b) $A + B = A \cdot B$
- (c) $A + A = A$
- (d) $A + 0 = A$



Q. 19) Which of the following is an example of binary codes?

- (a) A00101
- (b) 00101
- (c) 02456
- (d) A011800

Q. 20) A flip-flop circuit can be used for?

- (a) Counting only
- (b) Both for counting and scaling
- (c) Rectification
- (d) Demodulation



21)

Which of the following is an example of operating system with command based interface?

(a) Android

(b) Ubuntu

(c) MS-DOS

(d) iOS

22)

_____ is a Windows utility program that locates and eliminates unnecessary fragments and rearranges files and unused disk space to optimize operations.

(a) Backup

(b) Disk Cleanup

(c) Disk Defragmenter

(d) Restore



23)

What is the minimum number of stacks of size n required to implement a queue of size n ?

- (a) One
- (b) Two
- (c) Three
- (d) Four

24)

How many boolean functions of k variables are possible such that there are exactly m minterms?

- (a) 2^k
- (b) $2^k - 1$
- (c) $C(2^k, m)$
- (d) $P(2^k, m)$



25)

Which of the following operation easily performed by using a single stack?

Operation 1: Job Scheduling

Operation 2: Reversing the elements

(a) only operation 1

(b) only operation 2

(c) both operation 1 and operation 2

(d) None

26)

Which of the following code is employed by K-map for simplification of Boolean expressions?

(a) Gray code

(b) NBCD

(c) Excess-3 code

(d) BCD



27)

A stack can be implemented using queue, but then we need to use atleast:

- (a) 3 queues
- (b) 2 queues
- (c) only one queue is sufficient
- (d) none of the options

28)

Simplify the below given Boolean function $F(B, C, D) = B.C + \bar{B}.D + \bar{C}.D.$

- (a) $BC + D$
- (b) $B.C + \bar{B}.D$
- (c) $B\bar{C} + D$
- (d) $\bar{B}.C + D$



29)

Which of the following data structure does not follow the First in first out or First in last out strategy ?

- (a) stack
- (b) queue
- (c) deque
- (d) None of the above

30)

Which of the following is a cloud storage service provided by Microsoft?

- (a) iCloud
- (b) OneDrive
- (c) IDrive
- (d) Dropbox

31)

A recursive problem like tower of hanoi can be rewritten without recursion using:

- (a) stack
- (b) priority queue
- (c) graph
- (d) cycles

32) Which stack operation insert an element into the stack?

- (a) push
- (b) pop
- (c) is empty
- (d) peek

33) _____ among the following is a Language of JavaScript.

- (a) text/JavaScript
- (b) text/ECMAScript
- (c) text/VBScript
- (d) JavaScript VBScript

34) HTML is used to create:

- (a) Machine language program
- (b) High level program
- (c) Web server
- (d) Web page

35) "Skimming" in e-banking is a method of

- (a) converting Debit Card into Credit Card.
- (b) transferring cash from one account to another account.
- (c) stealing credit card information.
- (d) intimating the customer about his heavy withdrawals.

36) Outlook Express is a _____.

- (a) E-Mail Client
- (b) Browser
- (c) Search Engine
- (d) None of these

(37) Which is the most reliable topology

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

38) Which of the following cannot be subnet mask of a classful address?

- (a) 255.0.0.0
- (b) 0.255.255.255
- (c) 255.255.0.0
- (d) 255.255.255.0

39) The working area of MS PowerPoint is known as

- (a) Slide
- (b) Page
- (c) Worksheet
- (d) All of the above

40) Microsoft Windows, MacOS X and Linux are all examples of _____.

- (a) laptop brands
- (b) operating systems
- (c) motherboard types
- (d) CPUs

41)

Which of the following statements about Microsoft Access is incorrect?

- (a) Microsoft Access is an integral component of Microsoft Office.
- (b) Images cannot be saved to tables in Microsoft Access.
- (c) Microsoft Access was developed by Microsoft.
- (d) Microsoft Access is a relational database management system.

42) Choose the wrong option with respect to MS-Excel 2010:

- a) In MS-Excel 2010, we can save the file by using F2
- b) In MS-Excel 2010, we can insert comments to a cell
- c) In MS-Excel 2010, to open an existing file Ctrl + O is used
- d) In MS-Excel 2010, we can insert a table from the insert tab

43)

RDBMS refers to a database that stores data in a structured format, using rows and columns. Which of the following is NOT an example of RDBMS?

- (a) MySQL
- (b) Oracle Database
- (c) Microsoft SQL Server
- (d) IBM Domino

44)

Which of the following statement is correct?

- I. Linux is an open-source operating system.
 - II. Linux is a multitasking and multiprocessing operating system.
- (a) Both I and II
 - (b) Neither I nor II
 - (c) Only I
 - (d) Only II

45) Which statement cause immediate exit from the switch statement?

- a) stop
- b) halt
- c) continue
- d) break

46) Hardware includes

- a) All devices used to input data into a computer
- b) Set of instructions that a computer runs or executes
- c) All the devices connected to a computer that is used to input and output data
- d) None of the above

47) In octal number system, the digit ranges from _____.

- (a) 1 to 7
- (b) 1 to 8
- (c) 0 to 8
- (d) 0 to 7

48) Which of the following is NOT a peripheral device?

- (a) Printer
- (b) CPU
- (c) Keyboard
- (d) Mouse

49) Algorithm and Flow Chart help us

- (a) know the memory capacity.
- (b) Identify the base of a number system
- (c) Direct the output to a printer.
- (d) Specify the problem completely and clearly.

50) What is the 2's complement of 21?

- (a) 0001 0101
- (b) 1110 1011
- (c) 1110 1010
- (d) 1111 1011

51)

Which of the following is false with reference to wireless transmission media in data communication?.

- (a) Radio and infrared lights are the examples of wireless media.
- (b) Used for radio broadcasting in all direction
- (c) Installation needs more time and more money than wired media
- (d) The signal energy propagates in the form of unguided electromagnetic waves

52)

Wired transmission media such as cable or optic fibre are controlled by:

- (a) Physical Layer
- (b) Data Link layer
- (c) Network Layer
- (d) Transport Layer

53) Which of the following switching technique was used in ARPANET?

- (a) Message Switching
- (b) Packet Switching
- (c) Circuit Switching
- (d) Data switching

54)

Which data transmission media is used for local telephone communication and short distance?

(a) Electric cable

(b) Infrared

(c) Microwave

(d) Twisted pair

55)

In Guided media transmission using twisted pair, the twisting of cables is done:

(a) To avoid the cross talk between adjacent pairs

(b) To increase the bandwidth for transmission

(c) To avoid the physical damage to the wires

(d) All of the above

56)

Which among the following generations of computer did vacuum tube belong to?

- (a) First Generation
- (b) Third Generation
- (c) Fourth Generation
- (d) Second Generation

57)

Which of the statements given below are correct?

An Integrated Circuit (IC) is a collection of several circuits (transistors) packed on a single chip. The invention of ICs in the history of computing led to:

- (A) increased reliability of computers.
- (B) reduced cost of computers (because they could be mass manufactured).
- (C) reduced size of computers.

Choose the correct answer from the options given below:

- (a) (A) and (B) only
- (b) (B) and (C) only
- (c) (A) and (C) only
- (d) (A), (B) and (C)

58)

IBM 360 was developed in which of the following generations of computers?

(a) Second Generation

(b) First Generation

(c) Third Generation

(d) Fourth Generation

59) State whether True or False.

I) All computers have same processing speed.

II) The speed of a computer is measured in MHz or GHz.

(a) I - False, II - False

(b) I - True, II - True

(c) I - True, II - False

(d) I - False, II - True

60) First computer was installed in India at :

- (a) Indian Institute of Science, Bengaluru
- (b) Institute of Social Science, Agra
- (c) Indian Institute of Statistics, Delhi
- (d) Indian Statistical Institute, Kolkata

61)

Consider the following technologies:

- A. Microprocessor
- B. Transistor
- C. Vacuum Tube
- D. Artificial Intelligence

Arrange the above technologies of different computer generations in the order they have been used. Start from the technology that was used in first generation.

Choose the correct answer from the options given below:

(a) C, A, B, D

(b) C, B, A, D

(c) B, C, A, D

(d) C, B, D, A

62) Which of the following is the largest, fastest and costliest computer?

- (a) Personal computer
- (b) Super computer
- (c) Laptop
- (d) Note book

63)

Who has been credited deservedly as Father of the Computer, who is also the world-renowned inventor of Differential Engine and Analytical Engine?

- (a) John W. Backus
- (b) Harold Abelson
- (c) Vinton Cerf
- (d) Charles Babbage

64)

Which among the following is not an example of the 4th Generation of Computer?

- (a) Apple II
- (b) TRS-80
- (c) ICL 2900
- (d) STAR 1000

65)

The earliest calculating devices are;

- a) TRON
- b) Abacus
- c) ENIAC
- d) Analytical Engine

66) Checking of different hardware parts of computer is done by?

- (a) BIOS
- (b) Hard disk
- (c) Processor
- (d) C.D.

67)

If 'm' is the number of bits in a memory address and 'n' is the number of addressable units, then which of the following represents the correct relationship between 'm' and 'n'?

(a) $n = 2^m$

(b) $m = 2^n$

(c) $m = 2^n - 1$

(d) $n = 2^m + 1$

68) What is the speed-up factor of a m-stage pipeline with n-tasks?

(a) $(m \times n) / (m + n + 1)$

(b) $(m \times n) / (m + n - 1)$

(c) $(m \times n) / (m - n - 1)$

(d) $(m \times n) / (m - n + 1)$

69)

What is/are the advantages of using microprogramming as compared to hardwired method in implementation of control unit?

- (a) Cheaper and faster
- (b) Cheaper and less error prone to implement
- (c) Faster and less error prone to implement
- (d) Cheaper, faster and less error prone to implement

70)

Which of the following registers contain the instructions to be executed in CPU?

- (a) Index Register
- (b) Instructions Register
- (c) Memory Data Register
- (d) Memory Address Register

71) What is the full form of GSM in mobile computing ?

- (a) Global Services for mobile computing
- (b) Global Scientific mobile computing
- (c) Global Signalling for mobile computing
- (d) Global Systems for mobile communication

72)

Identify among the following, which are examples of SaaS cloud computing.

- (a) Dropbox
- (b) Salesforce
- (c) Google workshop
- (d) All of the above

73)

Which of the following is true about Data wiping in cloud bases storage device?

- (a) Deleted data is stored in back device by cloud provider.
- (b) Deleted data is overwritten by series of value to protect previously deleted data
- (c) If data is deleted, then that disk space will not be allocated to another user
- (d) None of these

74)

Which of the following technologies will be enabled by the 5G mobile communication networks?

1. Internet of Things
2. Edge Computing
3. Network Slicing

Select the correct answer using the codes given below

- (a) Only 1 and 2
- (b) Only 2 and 3
- (c) Only 1 and 3
- (d) 1, 2 and 3

75)

A complete operating system that works on a desktop computer, notebook computer, or a mobile computing device is called _____ operating system.

(a) Stand-alone

(b) Real time

(c) Server

(d) Mobile

76)

There are a plenty of highly user-friendly services provided by the computer giant Google that is based on cloud computing. One such service that is used to store, synchronize, and share files between devices like computers, laptops, android based mobile devices is commonly called as?

(a) Google Drive

(b) Google Play

(c) Google Apps

(d) Google Docs

77) A cell phone having 'Internet' connection facility is called:

- (a) Cellular phone
- (b) Cordless phone
- (c) Smartphone
- (d) Superphone

78)

Which of the following field is associated with 'Platform as a Service' and 'Green Cloud' terms?

- (a) Meteorology
- (b) Cloud Computing
- (c) Artificial Intelligence
- (d) Governance

79)

Which of the following service provider provides the least amount of built-in security?

- (a) Platform as a service
- (b) Infrastructure as a service
- (c) Software as a service
- (d) All of the above

80)

Which of the following is not a cloud storage?

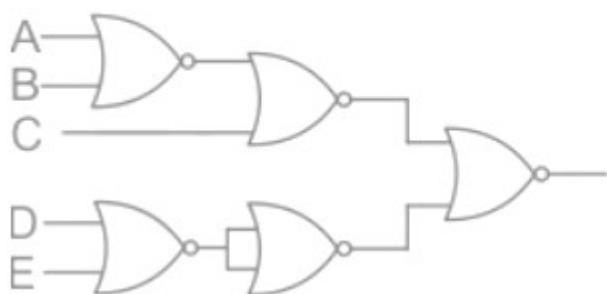
- (a) Hard disks
- (b) Xdrive
- (c) MediaMax
- (d) Strongspace

81)

In a D flip flop the out-put state Q is related with D input in what way?

- (a) Q is same as D
- (b) Q is complement of D
- (c) Q is independent of D
- (d) Q is dependent of D

82) The circuit shown in the following figure realizes the function



(a) $(\overline{A + B} + C)(\bar{D} \bar{E})$

(b) $(\overline{A + B} + C)(D \bar{E})$

(c) $(A + \overline{B + C})(\bar{D} E)$

(d) $(A + B + \overline{C})(\bar{D} \bar{E})$

83)

What will be the number of states when a MOD-4 counter is followed by a MOD-16 counter?

(a) 16

(b) 20

(c) 12

(d) 64

84)

Minimum number of NAND gates required to implement the following binary equation $Y = (\bar{A} + \bar{B})(C + D)$

(a) 4

(b) 5

(c) 3

(d) 6

85)

What is the input of the below give gates in form of ABC to get $f = 0$?



(a) 001

(b) 110

(c) 011

(d) 100
