

**Advanced Level**  
**Information and Communication Technology**

Time

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Year

**Rev/paper/11**

● Consider following details to provide answer from questions 1 to 3

Assume we have computer system that virtual memory address space is 16 bit and one page can store 0 to 64k entries. In this computer physical memory capacity is 32 KB and page size is 4KB.

User runs a particular program on this computer. A few selected fields of the page table of that process at a particular time are shown in the figure below.

Page No	Frame No.	Present / Absent bit
0	2	1
1	4	1
2	6	0
4	3	0
5	1	0
6	5	1
7	0	0

- What are the pages can become a demand paging according this page table ?
  - 2,4,5,7
  - 0,1,6
  - 6,7
  - 0,1,2,3,4,5,6,7
  - 0
- How many bits can be in this system.
  - 5
  - 4
  - 3
  - 2
  - 1
- Assume processor request virtual address 0010 0000 0000 0010 in a given time. To which physical address location will be use for this purpose.
  - 000 0000 0000 0000
  - 001 0000 0000 0010
  - 010 0000 0000 1000
  - 110 0000 0000 0010
  - 111 0000 0000 0001
- To manage the hardware components which type of software will use by the operating system.
  - Driver software
  - Application software
  - Operating system.
  - Word processing
  - Database management
- Most of the current computer systems nature is, user run more programs than the capacity of the memory. Therefore operating system keep small portion inside the memory and remaining portions maintained in secondary storages. Which statement is suitable for this process ?
  - Contiguous allocation
  - File allocation table.
  - Memory management unit
  - Page table, Pages, Frames
  - Cash memory
- Which operating system is most suitable for missile blocking systems.
  - Multi task
  - Simple batch operating system.
  - Threading
  - Real time operating system.
  - Time sharing system.
- Which program capable to find out the operating system from the storage device and load it into the memory.
  - BIOS
  - Bootstrap Loader
  - CMOS
  - BIOS, CMOS
  - Boot sector
- Assume CPU made request virtual memory address location 46 and relocation register value is 15000. What will be the physical memory location this will be mapped.

1. 150000      2. 15046      3. 15075      4. 14966      5. 0

9. Which statement is not related with the pooling ?

1. Input devices always less speed than the CPU. Therefore spooling technique is very useful to balance the speed difference related with the input devices and the CPU.
2. Small buffer area use from the secondary storage to store the data input from the input devices, after that CPU can access those data. This process is related with the spooling
3. Computer user was selected the print command using word processing application. After 10 seconds of time period printing job started. This also spooling situation.
4. Most of the operating systems are use spooling techniques.
5. Current operating system not use spooling technique because input devices and output devices are function equal speed.

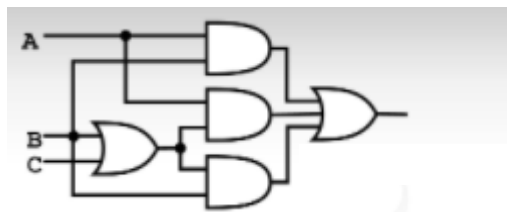
10. Which expression will not appear while simplify the expression  $\bar{A}BC + A\bar{B}C + AB\bar{C} + ABC$

1.  $AB+AC+BC$
2.  $\bar{A}BC + A\bar{B}C + AB$
3.  $\bar{A}BC + AB + AC$
4.  $B(A+C)+AC$
5.  $AB+A\bar{C}+B$

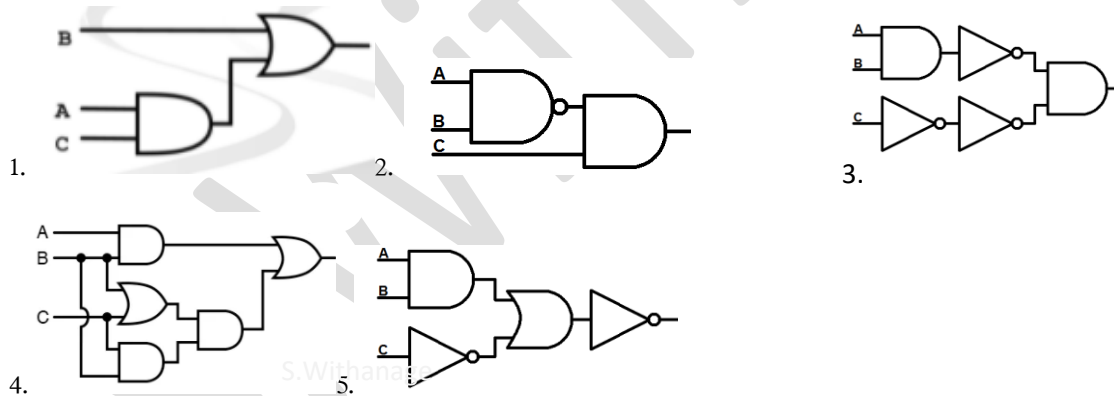
11. Which expression will not appear while simplify the expression  $AB+BC(B+C)$

1.  $AB+BBC+BCC$
2.  $AB+BC+BC$
3.  $AB+BC$
4.  $AB+BC$
5.  $B(A+C)$

12.



From the following circuits which one will be match with the above circuit ?



13. Which expression is match with the Boolean expression  $A\bar{B}\bar{C} + B\bar{C} + \bar{A}\bar{B}C + BC$

- (1)  $A\bar{B}\bar{C} + \bar{A}\bar{B}C + B$
- (2)  $\bar{B}(A\bar{C} + \bar{A}C) + B$
- (3)  $\bar{C}(A\bar{B} + B) + C(\bar{A}\bar{B} + B)$
- (4)  $A\bar{C} + \bar{A}C + B$
- (5)  $\bar{A}\bar{C} + B$

14. Boolean expression  $ABC + A\bar{C}$  is related with the digital circuit. In this circuit assume 1,1,0 are inputs related with the variable A,B,C. Then what will be the output.

1. 1 only
2. 0 only
3. 1 AND 0
4. 0 AND 1
5. No output

15. Which statement is correct related with the logic circuit.

1. Kmap cannot use to simplify the SOP expression.

2. Always Boolean rules should be use to simplify the Boolean expression. But K'map is not suitable.
3. Kmap is not a useful tool to simplify SOP and POS expression.
4. Number of rows in the truth table are equal with the number of cells in K'map
5. Truth table is not useful object to identify the intermediate output related with the digital circuit.

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