

**Name:****ID:**

1) Write the best abbreviation from the key list below to match the concepts and understanding:

**Key list:** Discretionary Access Control (**DAC**) ; Mandatory Access Control (**MAC**) ;  
 Originator Controlled Access Control (**ORCON**) ; Confidentiality security policy (**C**) ;  
 Integrity security policy (**I**) ; Military (governmental) security policy (**Military**) ;  
 Commercial security policy (**Commercial**)

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|------|--|
| 1 -  | Originator (creator) of object or information is controlling who can access information or object (owner does not)     |
| 2 -  | Individual user sets access control mechanism to allow or deny access to an object                                     |
| 3 -  | System mechanism controls access to object, and individual cannot alter that access                                    |
| 4 -  | Policy protecting only confidentiality – nothing about whether objects should be believed                              |
| 5 -  | Neither subject nor owner of object can decide on access permissions   |
| 6 -  | Identity Based Access Control (IBAC)   |
| 7 -  | Policy essentially protecting confidentiality and privacy issues, may care about integrity and less about availability |
| 8 -  | Policy protecting only integrity – how much objects can be trusted   |
| 9 -  | Rule-Based Access Control (RBCA)   |
| 10 - | Owner of object controls which subject or identity can access it   |
| 11 - | Policy mainly protecting integrity, may care about availability and less about confidentiality                         |

2) Consider a computer system with four users: Omar, Basem, Saleh, and Khalid. Omar owns the file OM, and Basem, Salih and Khalid can read it. Omar also gave Khalid and Saleh ability to execute his account. Saleh can read and write the file BA, which Basem owns, but Khalid and Omar can only execute it. Only Saleh can read and write the file SA, which he owns. Khalid owns two files KH and KHA. Omar can execute and read KH, while he and Basem and Saleh can execute KHA. Khalid's account is given read and execute rights to everyone except Saleh who is given read only. Assume that the owner of each of these files can execute his files. The owner also owns his account.

a) Define the subjects, objects, rights affecting this system.

b) Create the corresponding access control matrix (ACM).

c) Show the updated ACM after running the command below:

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command modification (.....)
  if read in A[Omar,KH] and execute in A[Khalid,Khalid]
  then
    delete own from A[Saleh,SA];
    enter write into A[Khalid,Saleh];
    create subject A;
    destroy object KHA;

```

end

a)