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Tutorial - 02 - DS

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U19CS009

Q-1 Complete the below table

Item	DOS		NOS	Middleware
	Multi proc - user	multi computing		
Degree of transparency	very high	high	low	High
Same OS on all nodes	Yes	Yes	No	No
Number of copies of OS	1	N	N	N
Basic of Communication	Shared memory	Messages	files	model specific
Resource Management	Global, central	Global, distributed	Per node	Per node
Scalability	No	Moderately	Yes	Varries
Openess	closed	closed	Open	Open.

Q-2 What is the role of middleware in distributed system?

→ Middleware is a software that provides services beyond those provided by OS to enable various components of distributed system to communicate

and manage data. Middleware is used to enhance the distribution transparency which is missing in network OS. In simple words, middleware aims at improving the single-system view that a distributed system should have.

Q-3 Compare and contrast distributed and network operating systems.

→

NOS

DOS

- | | |
|---|---|
| 1. main objective is to provide local services to remote client | Main objective is to manage the hardware resources |
| 2. communication is basis of files | Communication is basis of messages & shared memory |
| 3. more scalable | Relatively less scalable |
| 4. fault tolerance is low | Fault tolerance is high |
| 5. rate of autonomy is high in NOS | Rate of autonomy is low in DOS |
| 6. ease of implementation is high in NOS | Ease of implementation is low in DOS |
| 7. In NOS, all the nodes may have different OS, as it is heterogeneous. | In DOS, all the nodes must have same OS as it is homogeneous. |