


University : Menoufia Faculty : Electronic Engineering Department : Computer Science&Eng. Academic level : 4 th Year Course Name : Distributed Systems Course Code : : CSE 468		Date : 18/01/2017 Time : 10:00 – 1:00 No. of pages : 2 Full Mark : 70 Marks Exam : Final Exam Examiner : Dr: Nirmeen A. Wahab
--	---	--

Answer all the following questions:

Question No 1 :

(20 Marks)

a) Give one word:

1. B local and remote resources are accessed using the same operations (.....) access transparency
2. A remote resources are accessed using location independent names (.....) location transparency
3. B processes can access resources without interfering with each other (.....) concurrency transparency
4. The capability of a system to adapt the increased service load (.....) scalability / scaling transparency
5. A failures are concealed for the users of a resource (.....) failure transparency
6. B users of a resource access it as if it was not replicated (....) replication transparency
7. We call a system where one node is always reacting on requests and other nodes only communicate with this node (.....) client server system
8. Resources can be added to system to be extended (.....) openness
9. Audio, video, pictures and text messages (.....) open ended services
10. Client cache (.....) used to store data and resources which client recently used

b) Answer the following:

1. Explain two benefits of middleware to distributed system programmers, providing an example for each benefit.
2. State 3 advantages of client-server systems and 3 advantages of peer-to-peer systems.

Question No 2:

(25 Marks)

- a) Give the Gantt chart of a schedule for the sample task graph of Figure 1 on three unit of processors by
1. Breadth First technique.
 2. Clustering technique.
 3. Node duplication technique.
- b) Calculate speedup and efficiency parameters for each.
- c) Which one is the best from point of view load balancing, schedule length, and system utilization?

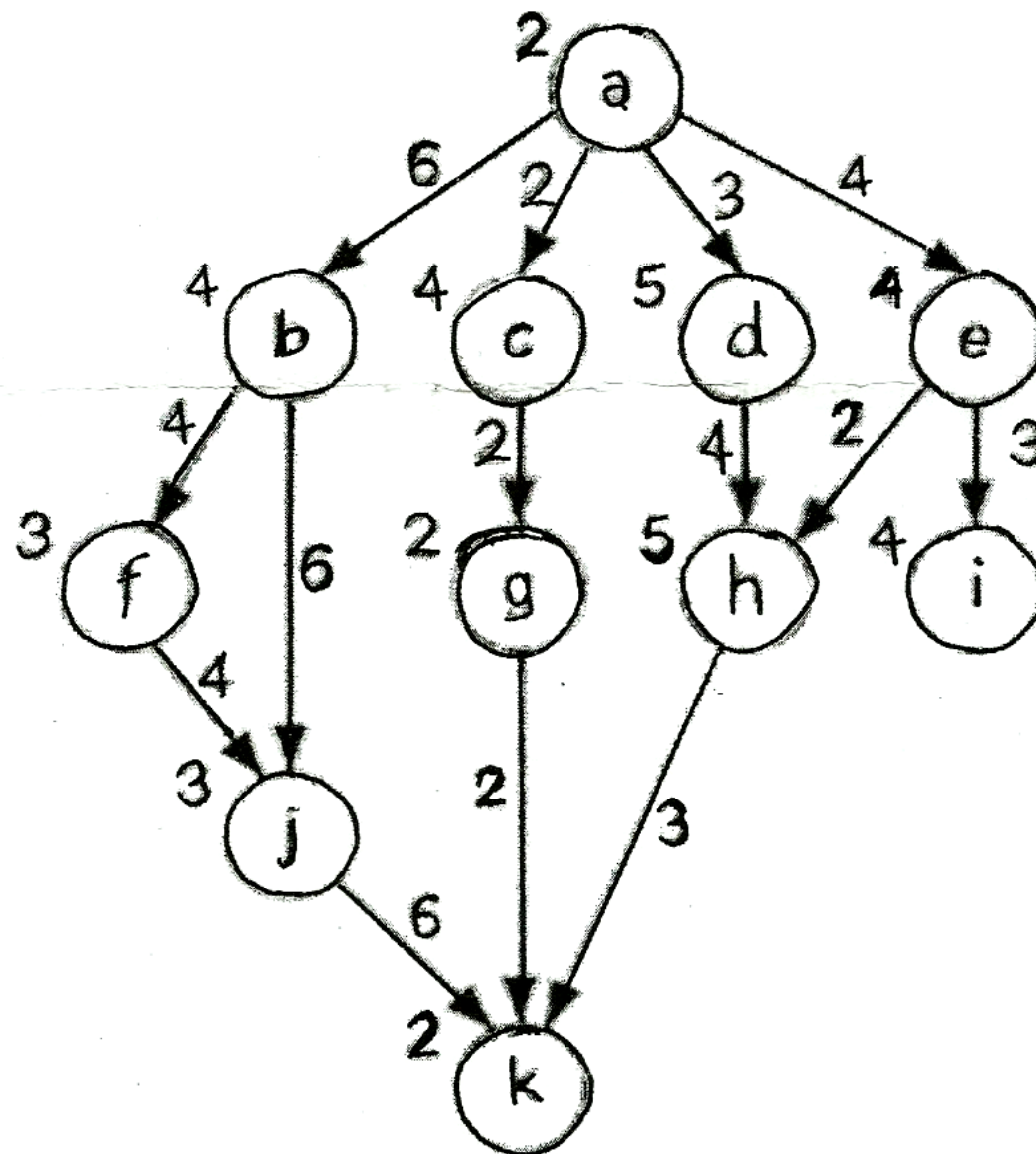


Fig. 1

Question No 3 :**(25 Marks)**

- a) What is “cloud computing”? State Common characteristics.
- b) Draw the cloud computing stack.
- c) Why should one prefer public cloud over private cloud?
- d) State cloud computing challenges.
- e) According to next tables which system can user rent to execute his application (4 tasks -2 hours each) , how much does it cost

Table [1] Amazon EC2 instance types and price

Instance Type	VM_type1	VM_type2	VM_type3
CPU	4	7	20
Price(\$/hour)	0.34	0.5	.64

Table [2] Googl instance types and price

Machine type	VCPUs	Price(\$/HOUR)
n1-highmem-2	2	\$0.126
n1-highmem-4	4	\$0.252
n1-highmem-8	8	\$0.504
n1-highmem-16	16	\$1.008
n1-highmem-32	32	\$2.016

With best wishes***Achieved ILOS :***

Question No		Q1			Q2			Q3			Q4	
		a	b	c	a	b	c	a	b	c	a	b
Achieved ILOS	A- Knowledge & Understanding	a1	a5	a18	a3	a17	a18	a14	a7	a17	a1	a18
	B- Intellectual skills			b7		b4		b12				b17
	C- Professional and practical skills			c7		c6	c7					c7
	D- General and transferable skills		d2						d3, d6			d6