Branch : CSE & IT **Batch : English**

Operating Systems

Memory Management

DPP 02

[MCQ]

1. Drawback of static loading is_____.

(a) Ineffective utilization of memory.
(b) Requires more time
(c) Need to load data before execution
(d) None of these

[MCQ]

2. Loading of modules of the program on demand is known as_____.

(a) Static loading (b) Access loading
(c) Dynamic loading (d) Page loading

[MSQ]

3. Dynamic link libraries are____ .

(a) Libraries that are linked with application during loading
(b) Libraries that are linked with application after compilation.
(c) Libraries that are linked with application before execution
(d) Libraries that are linked with the application at run time on demand

[MCQ]

4. Which of the following are address binding?

(a) Link time binding
(b) Compile time binding
(c) Load time binding
(d) Dynamic time binding

[NAT]

5. Consider a memory with the capacity of 32MB, how many bits are required to address this memory?

[MSQ]

6. Suppose 28 bits required to address a memory space, what would be the capacity of memory?

(a) 256 MB (b) 4096 Mb
(c) 512 MB (d) 2048 Mb

[MCQ]

7. Given are memory capacity (N) along with number of bits required to address that memory (n).
Match them correctly

N	n
(A) 16 MB	(i) 15 bits
(B) 32 KB	(ii) 16 bits
(C) 8 GB	(iii) 24 bits
(D) 64 KB	(iv) 33 bits

(a) A – (ii); B – (i); C – (iii); D – (iv)
(b) A – (iii); B – (i); C – (iv); D – (ii)
(c) A – (iii); B – (ii); C – (iv); D – (i)
(d) A – (ii); B – (iv); C – (iii); D – (i)

Answer Key

1. **(a)**
2. **(b)**
3. **(d)**
4. **(b, c, d)**
5. **(25)**
6. **(a, d)**
7. **(b)**

Hints & Solutions

1. (a)

Static loading leads to wastage of space for example consider the following program.

Main( )	f ()	g( )
{	{	{
if (Condition)		
f();	g()	
}	}	return 0;
		}
↓	↓	↓
Need 2KB	Need 10KB	Need 15KB

If the if (condition) gets fail in main () function, then it will waste the additional 10 + 15KB space for function f() and g().
So, static loading sometimes causes ineffective memory utilization.

2. (b)

Dynamic loading is done at run time and it is known as loading of the module of the program on demand.

3. (d)

Libraries that are linked with the application at run time on demand are known as Dynamic link libraries.

4. (b, c, d)

Addressing binding are of following types:

(i) Compile time binding

(ii) Load time binding

(iii) Dynamic time binding

5. (25)

N = 32MB

$n = \log_2 N$

$n = \log_2 (32\ MB)$

$= \log_2 (2^5 \cdot 2^{20})$

$= \log_2 (2^{25})$

$n = 25$ bits

6. (a, d)

$n = 28$

$N = 2^n$

$N = 2^{28}$

$\Rightarrow N = 2^8 . 2^{20}$

$\Rightarrow N = 256MB \approx 2048Mb$

7. (b)

A N = 16MB

n = 24 bits ….(iii)

B N = 32MB

n = 15 bits ….(i)

C N = 8GB

n = 33 bits ….(iv)

D N = 64 KB

n = 16 bits ….(ii)