Subject: Operating System Unit: Address Space (Unit 3) MCQ

1. CPU fetches the instruction from memory according to the value of \_\_\_\_\_\_\_\_\_\_\_\_  
a) program counter  
b) status register  
c) instruction register  
d) program status word

Ans: a) program counter

2. A memory buffer used to accommodate a speed differential is called \_\_\_\_\_\_\_\_\_\_\_\_  
a) stack pointer  
b) cache  
c) accumulator  
d) disk buffer

Ans: b) cache

3. Which one of the following is the address generated by CPU?  
a) physical address  
b) absolute address  
c) logical address  
d) none of the mentioned

Ans: c) Logical Address

4. Run time mapping from virtual to physical address is done by \_\_\_\_\_\_\_\_\_\_\_\_  
a) Memory management unit  
b) CPU  
c) PCI  
d) None of the mentioned

Ans: a) Memory management unit

5. Memory management technique in which system stores and retrieves data from secondary storage for use in main memory is called?  
a) fragmentation  
b) paging  
c) mapping  
d) none of the mentioned

Answer: b) paging

6. The address of a page table in memory is pointed by \_\_\_\_\_\_\_\_\_\_\_\_  
a) stack pointer  
b) page table base register  
c) page register  
d) program counter

Answer: b) page table base register

7. Program always deals with \_\_\_\_\_\_\_\_\_\_\_\_  
a) logical address  
b) absolute address  
c) physical address  
d) relative address

Answer: a) logical address

8. The page table contains \_\_\_\_\_\_\_\_\_\_\_\_  
a) base address of each page in physical memory  
b) page offset  
c) page size  
d) none of the mentioned

Answer: a) base address of each page in physical memory

9. What is Coalescing?  
a) a joining technique of blocks for overcoming internal fragmentation  
b) a paging technique  
c) a technique for overcoming external fragmentation  
d) a technique for overcoming fatal error

Answer: a) Joining technique of blocks for overcoming internal fragmentation

10. What is compaction?  
a) a technique for overcoming internal fragmentation  
b) a paging technique  
c) a technique for overcoming external fragmentation  
d) a technique for overcoming fatal error

Answer: c) a technique for overcoming external fragmentation

11. Operating System maintains the page table for \_\_\_\_\_\_\_\_\_\_\_\_  
a) each process  
b) each thread  
c) each instruction  
d) each address

Answer: a) each process

12. Determine the number of page faults when references to pages occur in the following order : 1, 2, 4, 5, 2, 1, 2, 4. Assume that the main memory can accommodate 3 pages and the main memory already has the pages 1 and 2, with page 1 having been brought earlier than page 2. (LRU algorithm is used)

a) 3

b) 5

c) 4

d) None of these

Answer: c) 4

13. The main memory accommodates \_\_\_\_\_\_\_\_\_\_\_\_  
a) operating system  
b) cpu  
c) processes  
d) a) & c)

Answer) d) a) & c)

14. In contiguous memory allocation \_\_\_\_\_\_\_\_\_\_\_\_  
a) each process is contained in a single contiguous section of memory  
b) all processes are contained in a single contiguous section of memory  
c) the memory space is contiguous  
d) none of the mentioned

Answer: a) each process is contained in a single contiguous section of memory

15. With relocation and limit registers, each logical address must be \_\_\_\_\_\_\_ the limit register.  
a) less than  
b) equal to  
c) greater than  
d) none of the mentioned

Answer: a) less than

16. The operating system and the other processes are protected from being modified by an already running process because \_\_\_\_\_\_\_\_\_\_\_\_  
a) they are in different memory spaces  
b) they are in different logical addresses  
c) they have a protection algorithm  
d) every address generated by the CPU is being checked against the relocation and limit registers

Answer: d) every address generated by the CPU is being checked against the relocation and limit registers

17.  In internal fragmentation, memory is internal to a partition and \_\_\_\_\_\_\_\_\_\_\_\_  
a) is being used  
b) is not being used  
c) is always used  
d) none of the mentioned

Answer: b) is not being used

18. A solution to the problem of external fragmentation is \_\_\_\_\_\_\_\_\_\_\_\_  
a) compaction  
b) larger memory space  
c) smaller memory space  
d) none of the mentioned

Answer: a) compaction

19. \_\_\_\_\_\_\_\_\_\_ is generally faster than \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_  
a) first fit, best fit, worst fit  
b) best fit, first fit, worst fit  
c) worst fit, best fit, first fit  
d) none of the mentioned

Answer: a) first fit, best fit worst fit

20. External fragmentation exists when?  
a) enough total memory exists to satisfy a request but it is not contiguous  
b) the total memory is insufficient to satisfy a request  
c) a request cannot be satisfied even when the total memory is free  
d) none of the mentioned

Answer: a

21. External fragmentation will not occur when?  
a) first fit is used  
b) best fit is used  
c) worst fit is used  
d) no matter which algorithm is used, it will always occur

Answer: d) no matter which algorithm is used, it will always occur

22. Physical memory is broken into fixed-sized blocks called \_\_\_\_\_\_\_\_  
a) frames  
b) pages  
c) backing store  
d) none of the mentioned

Answer: a) frames

23. Logical memory is broken into blocks of the same size called \_\_\_\_\_\_\_\_\_  
a) frames  
b) pages  
c) backing store  
d) none of the mentioned

Answer: b) pages

24. Every address generated by the CPU is divided into two parts. They are \_\_\_\_\_\_\_\_\_\_\_\_  
a) frame bit & page number  
b) page number & page offset  
c) page offset & frame bit  
d) frame offset & page offset

Answer: b) page number & page offset

25. The \_\_\_\_\_\_\_\_\_\_ is used as an index into the page table.  
a) frame bit  
b) page number  
c) page offset  
d) frame offset

Answer: b) page number

26. The \_\_\_\_\_ table contains the base address of each page in physical memory.  
a) process  
b) memory  
c) page  
d) frame

Answer: c

27. The size of a page is typically \_\_\_\_\_\_\_\_\_\_\_\_  
a) varied  
b) power of 2  
c) power of 4  
d) none of the mentioned

Answer: b) power of 2

28. If the size of logical address space is 2 to the power of m, and a page size is 2 to the power of n addressing units, then the high order \_\_\_\_\_ bits of a logical address designate the page number, and the \_\_\_\_ low order bits designate the page offset.  
a) m, n  
b) n, m  
c) m – n, m  
d) m – n, n

Answer: d) m – n, n

29. Paging increases the \_\_\_\_\_\_ time.  
a) waiting  
b) execution  
c) context – switch  
d) all of the mentioned

Answer: c) context – switch

30. Each entry in a translation lookaside buffer (TLB) consists of \_\_\_\_\_\_\_\_\_\_\_\_  
a) key  
b) value  
c) bit value  
d) constant

Answer: a) key

31.  If a page number is not found in the TLB, then it is known as a \_\_\_\_\_\_\_\_\_\_\_\_  
a) TLB miss  
b) Buffer miss  
c) TLB hit  
d) All of the mentioned

Answer: a) TLB miss

32.  Illegal addresses are trapped using the \_\_\_\_\_ bit.  
a) error  
b) protection  
c) valid – invalid  
d) access

Answer: c) valid – invalid

33.  In segmentation, each address is specified by \_\_\_\_\_\_\_\_\_\_\_\_  
a) a segment number & offset  
b) an offset & value  
c) a value & segment number  
d) a key & value

Answer: a) a segment number & offset

34. Each entry in a segment table has a \_\_\_\_\_\_\_\_\_\_\_\_  
a) segment base  
b) segment peak  
c) segment value  
d) none of the mentioned

Answer: a) segment base

35. The segment base contains the \_\_\_\_\_\_\_\_\_\_\_\_  
a) starting logical address of the process  
b) starting physical address of the segment in memory  
c) segment length  
d) none of the mentioned

Answer: b) starting physical address of the segment in memory

36. The segment limit contains the \_\_\_\_\_\_\_\_\_\_\_\_  
a) starting logical address of the process  
b) starting physical address of the segment in memory  
c) segment length  
d) none of the mentioned

Answer: c) segment length

37. The offset ‘d’ of the logical address must be \_\_\_\_\_\_\_\_\_\_\_\_  
a) greater than segment limit  
b) between 0 and segment limit  
c) between 0 and the segment number  
d) greater than the segment number

Answer: b) between 0 and segment limit