

Shivaji University, Kolhapur
October- 2020 B.E. (Semester VIII) Examinations
Course – Real Time Operating System
Multiple Choice Questions

1. Real time systems can be classified into ...

- a) Soft
- b) Hard
- c) Firm
- d) All of the above

2. A hard real-time system is one in which ...

- a) Failure to meet a single deadline may lead to complete and catastrophic system failure.
- b) Missing more than a few may lead to complete and catastrophic system failure.
- c) Performance is degraded but not destroyed by failure to meet response-time constraints.
- d) None of the above

3. Which of the following is/are synchronous aperiodic event ...

- a) Garbage collection
- b) Externally generated exception
- c) Cyclic code
- d) Branch instruction

4. Which of the following is/are asynchronous periodic event ...

- a) Typical branch instruction
- b) Regular, but not fixed-period interrupt
- c) Clock-generated interrupt

d) Traps

5. Which of the following pair of CPU utilization % and Zone type is/are correct ...

a) 83–99, questionable

b) 70–82, dangerous

c) 26–50, very safe

d) None of the above

6. Disciplines that impact on real-time systems engineering is/are...

a) Control Theory

b) Operations Research

c) Both a and c

d) None of the above

7. Which of following regarding RTOS is correct/ not misconception...

a) The study of real-time systems is mostly about scheduling theory.

b) There are no universal, widely accepted methodologies for real-time systems specification and design.

c) Rate-monotonic analysis has solved “the real-time problem.

d) None of the above

8. Overall system utilization $U=$...

a) $\sum_{i=1}^n u_i$

b) $\sum_{i=1}^n e_i/p_i$

- c) Both a and c
- d) None of the above

9. A system is said to be time-overloaded if...

- a) $U \geq 100\%$
- b) $U \leq 100\%$
- c) $U < 100\%$
- d) $U > 100\%$

10. Which of the following statement is true?

- a) Any occurrence that causes the program counter to change non-sequentially is considered a change of flow-of-control
- b) The release time is the time at which an instance of a scheduled task is ready to run, and is generally associated with an interrupt
- c) Both a and c
- d) None of the above

11. Which of the following represent a possible change in flow-of-control?

- a) Invocation of procedures in C
- b) Instantiation of an object
- c) If-then, goto, and case statements
- d) All of the above

12. The (CPU) utilization or time-loading factor, U, is a ...

- a) Measure of the percentage of idle processing
- b) Measure of the percentage of non-idle processing

- c) Both a and b
- d) None of the above

13. Which of the following is example of RTOS?

- a) Inertial measurement system for an aircraft
- b) System used to control a set of traffic lights at a four-way traffic intersection
- c) System that controls all aspects of the bottling of jars of pasta sauce
- d) All of the above

14. Many real-time systems utilize time-stamping and global clocks for...

- a) Synchronization
- b) Task initiation
- c) Data marking
- d) All of the above

15. Real-time systems are often ...

- a) Reactive systems
- b) Embedded systems
- c) Data marking
- d) a and b

16. Which of the following is/are system wide bus?

- a) Power
- b) Address
- c) Data

d) All of the above

17. In signaling between devices is it is important to have a mechanism for “recording” the appearance of that signal for later processing. This process is called ...

a) Latching

b) Tristate logic

c) Triggering

d) None of the above

18. FireWire technology was originally developed by...

a) Microsoft

b) Apple

c) Google

d) None of the above

19. Using EDF algorithm practically, it is impossible to achieve 100 percent utilization due to

_____.

a) the cost of context switching

b) interrupt handling

c) power consumption

d) all of the mentioned

20. There are generally kinds of instructions.

a) 5

b) 4

c) 7

d) 6

21. In rate monotonic scheduling, a process with a shorter period is assigned _____

- a) a higher priority
- b) a lower priority
- c) higher & lower priority
- d) none of the mentioned

22. A single 1394 port can be used to connect up External devices.

- a) 58
- b) 64
- c) 62
- d) 63

23. The CISC is based on which of the following principle.

- a) Complexity handled by the compiler and software
- b) Instructions executed directly by hardware
- c) There are multiple instructions and addressing modes
- d) Highly pipelined design

24. Which of the following require special data-movement instructions

- a) Memory-Mapped Input/Output
- b) Programmed Input/Output
- c) Direct Memory Access
- d) None of the above

25. Upon receipt of the interrupt signal, the contents of the program counter are saved to a designated memory location called the...

- a) Status register
- b) Interrupt-handler location
- c) Interrupt return location
- d) None of the above

26. The interrupt vector contains the...

- a) Bit map of all pending interrupts
- b) Value of the lowest interrupt that will currently be honored
- c) Identity of the highest-priority interrupt request
- d) None of the above

27. Intel 82093AA I/O Advanced Programmable Interrupt Controller supports programmable interrupts

- a) 24
- b) 32
- c) 16
- d) None of the above

28. Interrupt register contains...

- a) Identity of the highest-priority interrupt request
- b) Bit map of all pending (latched) interrupts
- c) Value of the lowest interrupt that will currently be honored
- d) None of the above

29. Watchdog timers are used to ensure that...

- a) CPU continues to function
- b) Task initiation
- c) Certain devices are serviced at regular intervals
- d) Both a and c

30. The entry of all the PCBs of the current processes is in _____

- a) Process Register
- b) Program Counter
- c) Process Table
- d) Process Unit

Shivaji University, Kolhapur
October- 2020 B.E. (Semester VIII) Examinations
Course – Real Time Operating System
Answer Key

Q.No.	Answer	Q.No.	Answer
1	D	16	D
2	A	17	A
3	A	18	B
4	C	19	C
5	C	20	D
6	C	21	A
7	B	22	D
8	C	23	C
9	D	24	B
10	C	25	C
11	D	26	C
12	B	27	A
13	D	28	B
14	D	29	D
15	D	30	C