END SEMESTER EXAMINATIONS (FEBRARY 2022) - MAKE UP - QUESTION PAPER - PART A

COURSE CODE : ICE 4060
COURSE NAME : REAL TIME OPERATING SYSTEM
SEMESTER : VII
DATE OF EXAM : 17/2/2022
DURATION : 45 + 3 minutes

Instructions for Students:
(1) ANSWER ALL THE QUESTIONS.
(2) EACH QUESTION CARRIES 1 MARK.
(3) YOU ARE INSTRUCTED TO INFORM THE INVIGILATOR AFTER SUBMISSION OF THIS FORM IN THE CHAT SECTION.

* Required

* This form will record your name, please fill your name.

1

STUDENT NAME: *

2

REGISTRATION NUMBER: *

3

Which factor will not affect the frequency of a quarts crystal (1 Point)

- [ ] angle at which the quarts is cut
- [ ] crystal temperature
- [ ] size
- [ ] input signal

4

Why quarts is used for oscillator design (1 Point)

- ◯ small and compact in size
- ◯ It will not rust
- ◯ not having a elastic property
- ◯ None of the above

5

Task with similar utilization are allocated to the same process ..... algorithm (1 Point)

- utilization balancing
- Bin packing
- RMS
- None of the above

6

In the below mentioned list which algorithm performance is better (1 Point)

- first fit random
- first fir decreasing
- Bin packing

7

In the below mentioned method which is most preferred mode of clock synchronization (1 Point)

- internal clock
- external clock
- distributed clock
- auto synchronization clock

8

In which priority of the task assigned by the programmer will remain unchanged (1 Point)

- ◯ static
- ◯ Dynamic
- ◯ Flash
- ◯ Hybrid

9

What are the categories of timer (1 Point)

- ☐ real time timer
- ☐ periodic timer
- ☐ one set timer
- ☐ pulse timer
- ☐ clock driven timer

10

In the following modes in which mode a task service will not be non-preemptible (1 Point)

- ◯ kernal mode
- ◯ User mode
- ◯ Optimal mode
- ◯ Drive mode

11

List the OS which will fall under the category of hard real time system (1 Point)

- ☐ VX works
- ☐ Linux
- ☐ Windows CE
- ☐ Windows NT

12

Each time when the clock interrupt arrives list the activities which will not take place (1 Point)

- [ ] Activate ISR flag
- [ ] Process timer events
- [ ] update execution budget
- [ ] update the ready queue
- [ ] Interrupt flag will be high

13

Which is not a component of OS (Operating system) (1 Point)

- ◯ file system
- ◯ process control system
- ◯ device driver system
- ◯ Cloud computing

14

In the below mentioned parts of OS which will be the major component of operating system (1 Point)

- file system
- process control system
- device driver system
- Cloud computing

15

How does a process will access system resources (1 Point)

- system call
- process interrupt
- scheduling process
- call resources

16

In the bellow mentioned option select the open source RTOS (1 Point)

- Apache
- Bind
- AMX -RTOS
- EROS
- All the above

17

In the below mentioned list select the thing that are process control calls (1 Point)

- Open
- Wait
- Read
- Write

18

In the below mentioned list select the things that are not Parameters of QOS (1 Point)

- [ ] network quality
- [ ] delay jitter
- [ ] loss rate
- [ ] connection quality
- [ ] Bandwidth
- [ ] transmission delay

19

Hard real time operating system has _____ jitter than a soft real time operating system (1 Point)

- ◯ Less
- ◯ more
- ◯ equal
- ◯ none of the above

20

In which of the bellow mentioned scheduling policy, certain amount of CPU time is allocated to each process? (1 Point)

- earliest deadline first scheduling
- proportional share scheduling
- equal share scheduling
- none of the mentioned

21

A photo frame source transmit 30 frames /sec each frame contains 2Mb data. Jitter is 5 sec. Calculate the buffer size (1 Point)

- 30
- 300
- 3000
- 30000

22

In below mentioned parameter which will affect real time communication loss rate (1 Point)

- Delay bound variation
- delay jitter bound variation
- Buffer overflow
- Transmission delay
- Data corruption

23

Calculate worst case response time {(1,3), (1,5),(1,6),(2,10)} (1 Point)

- 1,2,3,4
- 1,2,3,9
- 1,3,4,9
- 2,3,5,6

24

Calculate response time for task3 (1 Point)

Task	C	T
1	40	100
2	40	150
3	100	350

- 200
- 600
- 300
- 350

25

Alteration between transmission of fixed sized packets and an idle period (1 Point)

- CBR
- VBR
- Sporadic traffic
- None of the above

26

An alarm system is an example of (1 Point)

- CBR
- VBR
- Sporadic traffic
- None of the above

27

In the below mentioned protocol which has less propagation time (1 Point)

- CAN
- LAN
- VAN
- WAN

28

Which of the bellow mentioned topology node use broadcast mode of communication (1 Point)

- Star
- Bus
- Ring
- Tree

29

In RT Linux system calls will take (1 Point)

- Long time
- Short time
- Wait for call
- Interrupt the process

30

Unix V is suitable for ..... real time system (1 Point)

- Hard
- Soft
- Firm
- None of the above

31

In the following OS section which will support mololithic kernel (1 Point)

- [ ] Windows
- [ ] MS-Dos
- [ ] Unix
- [ ] Linux

32

Problems with circuit switched network (1 Point)

- [ ] not effective for applications that are inherently bursty in nature
- [ ] it is not suitable for firm real time system
- [ ] fixed portion of bandwidth is reserved based on the peak bandwidth requirement
- [ ] communication delay due to slow data transmission