

University of Mumbai
Examination 2020 under cluster 2 (FrCRCE)

Program: BE Electronics Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester VI

Course Code: ELX 601 and Course Name: Embedded Systems and RTOS

Time: 1 hour

Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	RTOS is used in most embedded systems when the system does
Option A:	concurrent processing of multiple real time processes
Option B:	sequential processing of multiple processes when the tasks have real time constraints
Option C:	real time processing of multiple processes
Option D:	the concurrent processing of multiple processes, tasks have real time constraints and deadlines, and high priority task preempts low priority task as per the real time constraints.
Q2.	What does API stand for?
Option A:	Address programming interface
Option B:	Application programming interface
Option C:	Accessing peripheral through interface
Option D:	Address programming interface
Q3.	An embedded system hardware can
Option A:	Have microprocessor or microcontroller or single purpose processor
Option B:	Have Digital signal processor
Option C:	Have one or several microprocessors or microcontrollers or digital signal processors or single purpose processors
Option D:	Not have single purpose processor (s).
Q4.	_____ is an output device for displaying alphanumeric characters.
Option A:	LED
Option B:	7 segment display
Option C:	diode
Option D:	photo diode
Q5.	When 7-segment display is used in Embedded systems to display 0, which statement is true for a common cathode display?
Option A:	Particular cathodes are connected to port pins to display number 0.
Option B:	Particular anodes are connected to port pins to display number 0.
Option C:	All cathode terminals are connected to port pins to display number 0.

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Option D:	All anode terminals are connected to port pins to display number 0.
Q6.	RS-232 supports two different types of connectors, namely; _____ and _____.
Option A:	DB-9, DB-25
Option B:	DB-5, DB-29
Option C:	DB-9, DB-29
Option D:	DB-5, DB-25
Q7.	ZigBee is a _____ power, _____ cost, _____ network communication protocol
Option A:	high, high, wireless
Option B:	low, low, wired
Option C:	high, low, wireless
Option D:	low, low, wireless
Q8.	In _____, only the clock provided to CPU gets deactivated, whereas peripherals clock will remain active in this mode
Option A:	Idle Mode
Option B:	Power down mode
Option C:	Brown out
Option D:	Reset
Q9.	Serial interfaces like I2C, SPI, UART, 1-Wire, etc and parallel bus interface, are examples of
Option A:	External Communication Interface
Option B:	Offboard Communication Interface
Option C:	Product level communication interface
Option D:	Onboard Communication Interface
Q10.	Which of the following is a part of RTOS kernel?
Option A:	Memory
Option B:	Input
Option C:	ISR
Option D:	Register
Q11.	Which algorithm can be used to schedule tasks at run-time?
Option A:	Online scheduler
Option B:	Offline scheduler
Option C:	Multi-processor scheduler
Option D:	Uni-processor scheduler
Q12.	The execution of the task is known as
Option A:	Process
Option B:	Job
Option C:	Task
Option D:	Thread

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Q13.	The bounded buffer problem is also known as:
Option A:	Readers –Writers problem
Option B:	Dining –Philosophers problem
Option C:	Producer –Consumer problem
Option D:	Shared data problem
Q14.	For real time operating systems, interrupt latency should be
Option A:	minimal
Option B:	maximum
Option C:	zero
Option D:	dependent on the scheduling
Q15.	What is a Process Control Block?
Option A:	Process type variable
Option B:	Data Structure
Option C:	A secondary storage section
Option D:	A Block in memory
Q16.	Which statement is used to condense the code to improve the eligibility?
Option A:	define MACRO()
Option B:	# include
Option C:	if
Option D:	else-if
Q17.	In a safety critical system, incorrect operation
Option A:	does not affect much
Option B:	causes minor problems
Option C:	causes major and serious problems
Option D:	causes slow response
Q18.	A process P1 has a period of 50 and a CPU burst of $t_1 = 25$, P2 has a period of 80 and a CPU burst of 35. The total CPU utilization is
Option A:	0.90
Option B:	0.74
Option C:	0.94
Option D:	0.80
Q19.	The maximum operating distance supported by RS-232 is ____ feet at the highest supported baud rate.
Option A:	5
Option B:	500
Option C:	50
Option D:	5000

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Q20.	Which of the following are used to test the software?
Option A:	Data entity
Option B:	Data entry
Option C:	Data table
Option D:	Data book
Q21.	Which of the following is the design in which both the hardware and software are considered during the design?
Option A:	platform based design
Option B:	memory based design
Option C:	software/hardware codesign
Option D:	peripheral design
Q22.	What is CISC?
Option A:	Computing instruction set complex
Option B:	Complex instruction set computing
Option C:	Complementary instruction set computing
Option D:	Complex instruction set complementary
Q23.	Sophisticated embedded systems development requires
Option A:	IPs and several ASIPs
Option B:	IPs and several ASIPs, and hardware-software co-design
Option C:	multi-core processors
Option D:	system on chip with large memory
Q24.	A device driver is software for
Option A:	opening or connecting or binding or reading or writing or closing or other actions of the device
Option B:	receiving input or sending outputs from device
Option C:	access to parallel or serial port by the device
Option D:	controlling and configuring the device for read and write functions.
Q25.	Software written for embedded system is called
Option A:	Embedded software
Option B:	System program
Option C:	Operating system
Option D:	Application software