



## BRAINWARE UNIVERSITY

**Term End Examination 2021 - 22**  
**Programme – Master of Computer Applications**  
**Course Name – Embedded System Development**  
**Course Code - MCA402B**  
**( Semester IV )**

**Time allotted : 1 Hrs.15 Min.**

**Full Marks : 60**

[The figure in the margin indicates full marks.]

### Group-A

(Multiple Choice Type Question)

1 x 60=60

*Choose the correct alternative from the following :*

- (1) Which design allows the reuse of the software and the hardware components?
  - a) Memory Design
  - b) Input design
  - c) Platform-based design
  - d) Peripheral design
- (2) What does API stand for?
  - a) Application Programming Interface
  - b) Address Programming Interface
  - c) Accessing peripheral through the interface
  - d) None of these
- (3) What does FRIDGE stand for?
  - a) the floating-point programming design environment
  - b) the fixed-point programming design environment
  - c) floating-point programming decoding
  - d) fixed-point programming decoding
- (4) Which of the following tool can replace floating-point arithmetic with fixed-point arithmetic?
  - a) FAT
  - b) SDS
  - c) FRIDGE
  - d) VFAT
- (5) Which of the following is also known as loader?
  - a) Linker
  - b) Locator
  - c) Assembler
  - d) Compiler
- (6) Which command takes the object file and searches library files to find the routine calls?
  - a) Emulator
  - b) Simulator
  - c) Linker
  - d) Debugger
- (7) Which of the following language can describe the hardware?
  - a) C++
  - b) C
  - c) VHDL
  - d) JAVA
- (8) What describes the connections between the entity port and the local component?
  - a) One-to-one map
  - b) Many-to-one map
  - c) One-to-many maps
  - d) Port map
- (9) PLC stands for
  - a) Programmable Logic Controller
  - b) Programming Logical Controller
  - c) Programming Logic Controller
  - d) None of these

(10) In which type of communication, the interface gets a single byte of data from the microprocessor and sends it bit by bit to the other system serially and vice-versa?

- a) Parallel Communication Interface
- b) Serial Communication Interface
- c) Both of these
- d) None of these

(11) DMA stands for-

- a) Display Memory Access
- b) Directly Memory Access
- c) Device Memory Access
- d) Direct Memory Access

(12) The software substituted for hardware and stored in ROM is-

- a) Synchronous Software
- b) Package Software
- c) Firmware
- d) Middleware

(13) MOM stands for?

- a) Message oriented middleware
- b) Mails oriented middleware
- c) Middleware of messages
- d) Main object middleware

(14) A software that lies between the OS and the applications running on it.

- a) Firmware
- b) Middleware
- c) Utility Software
- d) Application Software

(15) A type of middleware that allows for between the built-in applications and the real-time OS?

- a) Firmware
- b) Database
- c) Middleware Portals
- d) Embedded Middleware

(16) Which terminology of PCB represents a thin photo-sensitive polymer by supporting photographic pattern of single traces or IC pads for etching?

- a) Prepreg
- b) Etching
- c) Photo-resist
- d) Solder mask

(17) Which among the below stated soldering methods is also renowned as 'High Frequency Resistance Soldering'?

- a) Iron Soldering
- b) Furnace Soldering
- c) Torch Soldering
- d) Electrical Soldering

(18) High current circuits are purposely located or placed near the edge of PCB in accordance to the supply lines for \_\_\_\_\_

- a) Removal of heat
- b) Isolation of stray current
- c) Reduction of path length
- d) all of these

(19) Which among the below stated devices/equipments are preferred for elimination of ground and supply line noise especially in TTL/CMOS / ECL PCB designing?

- a) Coupling capacitor
- b) Decoupling capacitor
- c) Snubber circuits
- d) None of these

(20) The \_\_\_\_\_ Operating System pays more attention to the meeting of the time limits.

- a) Network
- b) Distributed
- c) Online
- d) Real-time

(21) Which single task of a particular application is process is a type of processor...

- a) applicant processor
- b) one task processor
- c) real time processor
- d) dedicated processor

(22) The Designing of system take into considerations of \_\_\_\_\_.

- a) operating system
- b) communication system
- c) hardware
- d) all of these

(23) Which of the following is Preemptive, priority-based scheduling guarantees?

- a) protection of memory
- b) hard real-time functionality
- c) soft real-time functionality
- d) all of these

(24) Fixed instruction length is a feature of one of the following architecture.

- a) CISC
- b) RISC
- c) X86
- d) all of these

- (25) Evaluate the following statements and select the appropriate answer given from the choices below.  
 I. Von Neumann Architecture shares common memory for Data and Instructions II. Harvard Architecture has separate physical memories for Data and Instructions
- a) Only I is true  
 b) Only II is true  
 c) Both I and II are true  
 d) None of them is true
- (26) A CPU wrote „register content“ into the memory in a Big-endian mode. When the same content is read back from the memory into a register, the CPU reads it in Littleendian mode.
- a) The new content in the register will be different from what was written.  
 b) The content will be the same.  
 c) The content may be the same or different.  
 d) Endianness need not be the same while reading and writing the contents into /from the memory.
- (27) How many bits are required to specify the Register operands in an ARM7 instruction?
- a) 32 bits  
 b) 16 bits  
 c) 4 bits  
 d) 2 bits
- (28) An instruction that is used to move data from an ARM Register to a Status Register (CPSR or SPSR) is called \_\_\_\_\_
- a) MRC  
 b) MRS  
 c) MSR  
 d) MCS
- (29) In real time operating system \_\_\_\_\_
- a) all processes have the same priority  
 b) a task must be serviced by its deadline period  
 c) process scheduling can be done only once  
 d) kernel is not required
- (30) Hard real time operating system has \_\_\_\_\_ jitter than a soft real time operating system.
- a) less  
 b) more  
 c) equal  
 d) None of these
- (31) Designing of system take into considerations of \_\_\_\_\_
- a) Hardware  
 b) Operating system  
 c) Communication system  
 d) All of these
- (32) The interrupt latency should be-
- a) maximum  
 b) minimal  
 c) zero  
 d) None of these
- (33) What type of fault remains in the system for some period and then disappears?
- a) Transient  
 b) Permanent  
 c) Intermittent  
 d) All of these
- (34) The amount of memory in a real time system is generally
- a) less compared to PCs  
 b) high compared to PCs  
 c) same as in PCs  
 d) they do not have any memory
- (35) What is the maximum device handling capacity of serial standard protocol RS485 in terms of drivers and receivers on a single line?
- a) 8  
 b) 10  
 c) 16  
 d) 32
- (36) The high speed mode of operation of the USB was introduced by \_\_\_\_\_
- a) ISA  
 b) USB 3.0  
 c) USB 2.0  
 d) ANSI
- (37) The sampling process in speaker output is a \_\_\_\_\_ process.
- a) Asynchronous  
 b) Synchronous  
 c) Isochronous  
 d) None of these
- (38) The USB device follows \_\_\_\_\_ structure.
- a) List  
 b) Huffman  
 c) Hash  
 d) Tree
- (39) The I/O devices form the \_\_\_\_\_ of the tree structure.

- a) Leaves  
b) Subordinate roots
- c) Left subtrees  
d) Right subtrees
- (40) The device can send a message to the host by taking part in \_\_\_\_\_ for the communication
- a) Arbitration  
b) Prioritizing
- c) Multitasking  
d) Polling
- (41) The devices connected to USB is assigned a \_\_\_\_\_ address.
- a) 16 bit  
b) 17 bit
- c) 18 bit  
d) 7 bit
- (42) Which radio frequency band used by Bluetooth?
- a) 2.4 GHz  
b) 2.4 MHz
- c) 2.0 GHz  
d) 2.0 MHz
- (43) One piconet can have \_\_\_\_\_ master and \_\_\_\_\_ slave devices at maximum
- a) 1,7  
b) 1,8
- c) 1,15  
d) 2,7
- (44) LMP is an abbreviation of?
- a) Logical Manager Protocol  
b) Link Manager Protocol
- c) Link Managed Protocol  
d) Link Managed Point
- (45) L2CAP is an abbreviation of?
- a) Logical Link Control and Adaptation Protocol  
b) Logical Link Control and Application Protocol
- c) Logical Link Control and Ad-Hoc Protocol  
d) Logical Link Control and Active Protocol
- (46) In Bluetooth architecture, which protocol is known as cable replacement protocol?
- a) L2CAP  
b) LMP
- c) RFCOMM  
d) WAE
- (47) In Bluetooth architecture, which protocol is responsible to enable a device to join a piconet?
- a) L2CAP  
b) LMP
- c) SDP  
d) WAE
- (48) Following are features of ZigBee
- a) it is an industry consortium with the goal of promoting the ieee802.15.4 standard  
b) it ensures interoperability by defining higher network layers and application interfaces
- c) it is optimized for low data throughput up to 115.2 kbps, with simple or no qos support  
d) all of these
- (49) WSN stands for \_\_\_\_\_.
- a) Wireless sensor network  
b) Wired sensor network
- c) Wired sensor node  
d) Wireless sensor node
- (50) Which of the following is the function of a dedicated sensor?
- a) Records and monitors physical condition of environment  
b) Organizes collected data at a location that is centralized
- c) All of these  
d) None of these
- (51) WSN are spatially distributed \_\_\_\_\_ sensors.
- a) Autonomous sensors  
b) Dependent sensors
- c) Bi directional sensors  
d) None of these
- (52) WSN is built with \_\_\_\_\_.
- a) Nodes  
b) Switches
- c) Wires  
d) Radio
- (53) The components of a sensor node is \_\_\_\_\_.
- a) Radio trans receiver  
b) Microcontroller
- c) An electronic circuit  
d) all of these
- (54) A radio transceiver in WSN contains which component internally?
- a) Antenna  
b) Wire

- c) Electrode  
d) None of these
- (55) The energy source used in WSN are \_\_\_\_\_.
- a) Battery  
b) Inverter  
c) Capacitor  
d) None of these
- (56) Which of the following allows the reuse of the software and the hardware components?
- a) platform based design  
b) memory design  
c) peripheral design  
d) input design
- (57) Which activity is concerned with identifying the task at the final embedded systems?
- a) high-level transformation  
b) compilation  
c) scheduling  
d) task-level concurrency management
- (58) In which design activity, the loops are interchangeable?
- a) compilation  
b) scheduling  
c) high-level transformation  
d) hardware/software partitioning
- (59) Which design activity helps in the transformation of the floating point arithmetic to fixed point arithmetic?
- a) high-level transformation  
b) scheduling  
c) compilation  
d) task-level concurrency management
- (60) Which of the following is a process of analyzing the set of possible designs?
- a) design space exploration  
b) scheduling  
c) compilation  
d) hardware/software partitioning