



EMBEDDED SYSTEMS (16EC429) BIT BANK

UNIT-I

1. Which of the following is not an embedded system: []
A) Smartphone B) Digital Camera C) MP3 Player D) Desktop Computer
2. Name of the first Microprocessor produced by Intel is []
A) 8085 B) 8086 C) 4004 D) 4002
3. "Navigation system" falls under in which application area of embedded system []
A) Security B) Personal C) Aerospace D) Instrumentation
4. Program memory is also known as []
A) RAM B) ROM C) Flash D) Both (B) & (C)
5. No. of locations that an 32-bit address bus can handle, is []
A) 2GB B) 4GB C) 16GB D) 32GB
6. If the frequency of clock is $f_{clk} = 24\text{KHz}$, then what is the value to be loaded in timer register to flash an LED for one second []
A) 0x2EE0h B) 0x1770h C) 0x5DC0h D) 0xBB80h
7. Which of the following are characteristics of an embedded system: []
A) Small size and weight B) Reactive and real-time C) More reliability D) all of these.
8. It retains its content when power is removed. What type of memory is this? []
A) Volatile B) Non-Volatile C) SRAM D) DRAM.
9. Name a non-volatile memory []
A) DRAM B) ROM C) SRAM D) none of the above.
10. Embedded Systems are.... []
A) General purpose B) Special Purpose C) Multi Purpose D) None
11. The First Recognized Modern Embedded System is []
A) Apple Computer B) Apollo Guidance Computer C) Calculator D) Navigation system
12. A Digital Multimeter Is Example Of Embedded System for []
A) Data Communication B) Monitoring C) Control D) All of These
13. Which of the following is not an example of small scale embedded systems []
A) Electronic Barbie Doll B) Simple Calculator C) Cell Phone D) Electronic Toy Car
14. The First Mass Produced Embedded Systems is []
A) Calculator B) Radar System C) Autonetics D-17 D) Apollo Guidance Computer
15. Which of the following is/are an Intended Purpose of Embedded Systems: []
A) Data Collection B) Data Processing C) Data Communication D) All of These
16. Deadline-driven constraints so called_____ system []
A) Reality-time B) Real-time C) Real-data D) None of above
17. Which of the following is one time programmable memory []
A) SRAM B) PROM C) Flash D) NVRAM
18. How many memory cells are present in 3kb ram? []
A) 1024 B) 8192 C) 512 D) 8
19. Which tool is to convert a code written in assembly language into machine language []
A) Assembler B) Compiler C) Linker D) Editor
20. Which tool is helps you to see how your code will work in real time. []
A) Assembler B) debugger C) Linker D) Simulator
21. Which tool is used to test whether the code you have written is free from errors or not. []
A) Assembler B) debugger C) Linker D) Simulator
22. Which tool is a computer program that combines one or more object code files and library files together in to executable program. []
A) Assembler B) Compiler C) Linker D) Editor
23. The code written in editor is also referred to []
A) Object code B) Source code C) Library file D) none
24. Which of the following has programmable hardware? []
A) Microprocessor B) Microcontroller C) Coprocessor D) FPGA

25. Which is the storage element in DRAM? []
 A) Capacitor B) Inductor C) Transistor D) none of these
26. Which of the following processor performs calculations in graphics rendering? []
 A) GPU B) DSP C) MPU D) MCU
27. Which of the following is a combination of several processors on a single chip? []
 A) RISC B) CISC C) Subword parallelism D) Multicore processor
28. What is the purpose of address bus? []
 A) to provide data to and from the chip B) to select a specified chip
 C) to select a location within the memory chip D) to select a read/write cycle
29. Which of the following is the main factor which determines the memory capacity? []
 A) size of the capacitor B) number of capacitors C) size of the transistor D) number of transistors
30. Which of the following is more quickly accessed? []
 A) SRAM B) Cache C) DRAM D) EEPROM
31. Which of the following is not an advantage of Assembly language []
 A) Processor Specific instructions B) Few assembly instructions for drivers
 C) Bottom to top design D) Data type declaration
32. A program that translates instructions line by line to machine codes is known as: []
 A) Locator B) Assembler C) Cross-assembler D) Interpreter
33. Which of the following helps in reducing energy consumption of embedded system []
 A) Compiler B) Simulator C) Debugger D) Emulator
34. Which of the following processes the source code before it goes to the compiler? []
 A) Compiler B) Debugger C) Pre-processor D) Emulator
35. Which file is converted to an object file? []
 A) hex file B) decoded file C) coded file D) assembly file
36. Which of the following language can describe the hardware language? []
 A) C B) C++ C) Java D) VHDL
37. A program used for compiling source codes for another processor and vice-versa: []
 A) Interpreter B) Assembler C) Cross-assembler D) Cross-compiler
38. A program that reallocates physical memory address for loading into system RAM: []
 A) Locator B) Assembler C) Linker D) Loader
39. An embedded system which works by itself with or without little human interaction: []
 A) Real time B) Standalone C) Network D) none of these
40. Which of the following is the heart of an controller or processor: []
 A) ALU B) Timer C) Memory D) None of these
41. Which manage/controls the hardware and application software of embedded system: []
 A) Processor B) Assembler C) Memory D) RTOS
42. A program used for translating object codes to mnemonics of assembly language: []
 A) Interpreter B) Assembler C) Cross-assembler D) Disassembler
43. For simulating source code includes compiling, debugging, editing using a browser: []
 A) Emulator B) Prototyper C) Editor D) Simulator
44. Which of the following processor is an Digital signal processor: []
 A) 68HC11xx B) PIC16F84 C) SPARC D) TMS320Cx31.

UNIT-II

1. The instruction set of RISC processor is : []
A) simple & lesser in number B) complex & lesser in number
C) simple & larger in number D) complex & larger in number
2. Which of the following is true about CISC processors []
A) the instruction set non-orthogonal B)The number of general purpose registers is limited
C)instructions are like macros in c program D)variable length instructions
3. Which of the following processor architecture supports easier instruction pipelining? []
A)Harvard B)Von-Neumann C)Both A & B D) none of these
4. Which of the following is example for wireless communication interface? []
A) RS-232C B) Wi-Fi C) Bluetooth D) IEEE1394
5. Which of the following is an example for on-board interface is embedded system context []
A) I2C B) Bluetooth C) IEEE1394 D)All of These
6. What is the minimum number of interface lines required for implementing I2C interface? []
A)1 B)2 C)3 D)4
7. What is the maximum number of interface lines required for implementing SPI interface []
A)1 B)2 C)3 D)4
8. Which of The Following Are Synchronous Serial Interface []
A) I2C B)SPI C)UART D) Only A & B
9. What is the theoretical maximum data rate supported by GPRS []
A)8mbps B)12mbps C)100Kbps D)171.2Kbps
10. GPRS communication divides the radio channel into ----- timeslots []
A)2 B)3 C)5 D)8
11. In ZigBee network, which of following ZigBee entity stores information about network []
A)ZigBee Coordinator B)zigbee router
C)zigbee Reduced function device D)all of these
12. What is the maximum number of USB devices that can be connected to a USB Host ? []
A)unlimited B)128 C) 127 D)none of these
13. Two wire interface is also called as..... []
A)UART B)SPI C)I2C D)USART
14. SDA is having a..... transition when the clock line is high []
A)High To Low B)Low To High C)Low To Low D)High To High
15. Inter Integrated circuit is a..... []
A)Single Master,Single Slave B)Multi Master,Single Slave
C) Single Master,Multi Slave D) Multi Master,Multi Slave
16. What is the speed of I2C bus is.... []
A)100kbps B)10kbps C)75kbps D)100kbps & 10kbps
17. Which of the following can be used for long distance communications []
A)I2C B)Parallel PortC)SPI D)RS232
18. Which of the following can provide hardware Handshaking. []
A)RS232 B)parallel port C)Counter D)timer
19. which of the following have asynchronous data transmission []
A)SPI B)RS232 C)ParallelPort D)I2C
20. RS232 is also known as []
A)UART B)SPI C)Physical Interface D)Electrical Interface
21. Which of the following is not a serial protocol. []
A)SPI B)I2C C)Serial Port D)RS232
22. What does UART stands for []
A)Universal Asynchronous Receiver Transmitter
B) Unique Asynchronous Receiver Transmitter
C) Universal Address Receiver Transmitter
D) Unique Address Receiver Transmitter
23. How is data detected in a UART []
A)Counter B)Timer C)clock D)first bit
24. Which of the signal is set to one,if no data is transmitted? []
A)Ready B)START C)STOP D)TXD
25. Which Are The ProcessorS Based On RISC []
A)SPARC B)80386 C)MC68030 D)MC68020
26. Which Of The Architecture Is More Complex []
A) SPARC B) MC68030 C) MC68020 D)8086
27. Which is the first company who defined RISC architecture? []
A)INTEL B)IBM C)Motorola D)MIPS

28. Which of the following has a Harvard architecture? []
A) EDSAC B) SSEM C) PIC D) CSIRAC
29. Princeton architecture also known as []
A) Von Neumann B) Harvard C) RISC D) CISC
30. Which Of The Following Processors Has CISC Architecture []
A) AVR B) ATMEL C) BLACKFIN D) ZILOG Z80
31. Who Coined The Term RISC []
A) David Paatterson B) Von Neumann C) Michael J Flynn D) Harvard
32. which of the following is true about optocouplers []
A) optocoupler acts as input device only
B) optocoupler acts as output device only
C) optocoupler can be used in both input and output circuitry
D) none of these
33. which of the following monitoring the firmware execution []
A) Watchdog Timer B) oscillator C) PCB D) Reset Circuit
34. The first version of USB was released in []
A) 1995 B) 1986 C) 1985 D) 1996
35. The first version of IEEE1394 was released in []
A) 1995 B) 1986 C) 1985 D) 1996
36. Wi-Fi supports data rates ranging from []
A) 1Mbps to 50Mbps B) 1Mbps to 150Mbps C) 1Mbps to 5Mbps D) 1Mbps to 500Mbps
37. Depending on the type of antenna and usage location, Wi-Fi offers a range of []
A) 100 to 300 feet B) 100 to 1000 feet C) 100 to 800 feet D) 100 to 500 feet
38. Which of the following component is responsible for keeping track of time []
A) Counter B) Timer C) Real Time clock D) watchdog Timer
39. Piezo buzzer is adevice for generating audio indications in embedded applications []
A) Piezoelectric B) Piezoelectronic C) Piezomechanical D) None of these
40. Which of the following consists variable length instructions... []
A) CISC B) RISC C) HARVARD` D) None of these

UNIT-III

1. Which of the following is TRUE about Arduino Platform? []
A) In-Expensive B) Open source C) Cross-platform D) All of these
2. Arduino Uno board is based on _____ microcontroller []
A) ATmega128P B) ATmega228P C) ATmega328P D) ATmega428P
3. Operating voltage of Arduino Uno board is _____ []
A) 3.3v B) 5v C) 9v D) 12v
4. Recommended input voltage for Arduino Uno board is _____ []
A) 3.3v-5v B) 5v-7v C) 7v-12v D) 9v-12v
5. No. of Digital pins present in Arduino Uno board is _____ []
A) 6 B) 10 C) 12 D) 14
6. DC current per I/O pin in Arduino Uno board is: []
A) 20mA B) 30mA C) 40mA D) 50mA
7. The data bus size of ATmega328P microcontroller is ____ []
A) 8-bit B) 16-bit C) 32-bit D) none of these.
8. Flash memory present in ATmega328P microcontroller is []
A) 8KB B) 16KB C) 32KB D) 64KB
9. SRAM present in ATmega328P microcontroller is []
A) 1KB B) 2KB C) 3KB D) 4KB
10. DC current for 3.3v pin in Arduino Uno board is: []
A) 20mA B) 30mA C) 40mA D) 50mA
11. No. of Digital PWM pins present in Arduino Uno board is _____ []
A) 6 B) 10 C) 12 D) 14
12. EEPROM present in ATmega328P microcontroller is []
A) 1KB B) 2KB C) 3KB D) 4KB
13. Clock speed of Arduino Uno board is []
A) 12MHz B) 16MHz C) 25MHz D) 31MHz
14. No. of Analog pins present in Arduino Uno board is _____ []
A) 6 B) 10 C) 12 D) 14
15. In Arduino Uno board built-in LED is connected to ____ pin []
A) A1 B) A6 C) D0 D) D13
16. Number of 8-bit Timer(s) present in ATmega328P microcontroller is _____ []
A) 1 B) 2 C) 3 D) 4
17. Number of 16-bit Timer(s) present in ATmega328P microcontroller is _____ []
A) 1 B) 2 C) 3 D) 4
18. The resolution of ADC in ATmega328P microcontroller is _____ []
A) 8-bit B) 12-bit C) 10-bit D) 16-bit
19. Number of channels present in ADC of ATmega328P microcontroller is _____ []
A) 4 B) 6 C) 8 D) 10
20. Number of UART(s) present in ATmega328P microcontroller is _____ []
A) 1 B) 2 C) 3 D) 4
21. Number of sleep-modes present in ATmega328P microcontroller is _____ []
A) 4 B) 6 C) 8 D) 10
22. ATmega328P μ C follows ____ instruction set architecture & ____ memory architecture []
A) RISC & Von-Neumann B) CISC & Von-Neumann C) CISC & Harvard D) RISC & Harvard
23. PortC in ATMEGA328P microcontroller consists of ____ pins. []
A) 5 B) 6 C) 7 D) 8
24. Total number of pins present in ATMEGA328P microcontroller []
A) 26 B) 28 C) 30 D) 20
25. Which of the following has programmable hardware? []
A) Microprocessor B) Microcontroller C) Coprocessor D) FPGA
26. Which is the storage element in DRAM? []
A) Capacitor B) Inductor C) Transistor D) none of these
27. Which of the following processor performs calculations in graphics rendering? []
A) GPU B) DSP C) MPU D) MCU
28. Which of the following is a combination of several processors on a single chip? []
A) RISC B) CISC C) Subword parallelism D) Multicore processor

UNIT-IV

1. A program written with the IDE for Arduino is called _____ []
A) IDE source B) Sketch C) Cryptography D) Source code
2. A function is a series of programming statements that can be called by name. Which command is called once when the program starts: []
A) loop() B) setup() C) output() D) input()
3. It starts with a /* and continues until a */ What does this do? []
A) Loads a sketch B) Makes comments C) Compiles quicker D) Makes stars appear
4. What does GPIO stand for? []
A) General purpose inner outer propeller B) General purpose input output pins
C) General purpose interested old people D) General purpose input output processor
5. _____ are pre built circuit boards that fit on top of Android. []
A) Sensor B) Data types C) Breadboard D) Shields
6. What license is Arduino distributed under? []
A) Proprietary with GNU GPL B) Proprietary C) Shareware D) LGPL or GPL license
7. What does IDE stand for? []
A) In Deep Environment B) Integrated Development Environment
C) Internal Deep Escape D) Source code
8. Arduino shields are also called as []
A) Extra peripherals B) Add on modules C) Connectivity modules D) Another modules
9. Arduino sketch consists of inbuilt functions are _____ []
A) Build() & loop() B) setup() & build() C) setup() & loop() D) setup() & loop() & build()
10. What is the range of numbers you can store in a variable of type byte? []
A) 0 to 255 B) -128 to +127 C) 0 to 65535 D) 0 to 4294967295
11. To subtract 1 from a variable counter, you can use the following statement(s) []
A) Counter -1 B) Counter-- C) Counter - =1 D) All of these
12. A program written with the IDE for Arduino is called _____ []
A) IDE source B) Sketch C) Cryptography D) Source code
13. A function is a series of programming statements that can be called by name. Which command is called once when the program starts: []
A) loop() B) setup() C) output() D) input()
14. It starts with a /* and continues until a */ What does this do? []
A) Loads a sketch B) Makes comments C) Compiles quicker D) Makes stars appear
15. What does GPIO stand for? []
A) General purpose inner outer propeller B) General purpose input output pins
C) General purpose interested old people D) General purpose input output processor
16. _____ are pre built circuit boards that fit on top of Android. []
A) Sensor B) Data types C) Breadboard D) Shields
17. What license is Arduino distributed under? []
A) Proprietary with GNU GPL B) Proprietary C) Shareware D) LGPL or GPL license
18. What does IDE stand for? []
A) In Deep Environment B) Integrated Development Environment
C) Internal Deep Escape D) Source code
19. Arduino shields are also called as []
A) Extra peripherals B) Add on modules C) Connectivity modules D) Another modules
20. Arduino sketch consists of inbuilt functions are _____ []
A) Build() & loop() B) setup() & build() C) setup() & loop() D) setup() & loop() & build()
21. What is the range of numbers you can store in a variable of type byte? []
A) 0 to 255 B) -128 to +127 C) 0 to 65535 D) 0 to 4294967295
22. Which of the following Reads the value from a specified digital pin, either HIGH or LOW []
A) Digitalwrite() B) Digitalread() C) DigitalI/O() D) None of these
23. Which of the following writes the value from a specified digital pin, either HIGH or LOW []
A) Digitalwrite() B) Digitalread() C) DigitalI/O() D) None of these
24. Which of the following Configures the specified pin to behave either as I/P or O/P []
A) Digitalwrite() B) Digitalread() C) Pinmode() D) None of these

25. Which of the following reads value from specified analog pin []
 A)analogread() B) analogwrite() C) digitalI/O() D)None of these
26. Which of the following Configures the reference voltage used for analog input []
 A)Digitalwrite() B) Digitalreference() C) Pinmode() D)analogreference()
27. Which of the following Stops the generation of a square wave triggered []
 A)tone() B) notone() C) both D)None of these
28. Which of the following Reads a pulse (either HIGH or LOW) on a pin, []
 A)pulseIn() B) pulseOut() C) pulseread() D)None of these
29. Which of the following Shifts in a byte of data one bit at a time []
 A)ShiftIn() B) shiftout() C) shiftI/O() D)None of these
30. Which of the following Shifts out a byte of data one bit at a time []
 A)ShiftIn() B) shiftout() C) shiftI/O() D)None of these
31. Which of the following Pauses the program for the amount of time (in milliseconds) specified as parameter []
 A)time() B) delay() C) millis() D)None of these
32. Which of the following Returns the number of microseconds since the Arduino board began running the current program []
 A)ShiftIn() B) shiftout() C) shiftI/O() D)None of these
33. Which of the following Pauses the program for the amount of time (in milliseconds) specified as parameter []
 A)micros() B) delay() C) millis() D)None of these
34. Which of the following calculates the absolute value of number []
 A)abs() B) math() C) map() D)None of these
35. Which of the following Calculates the value of a number raised to a power []
 A)pow() B) sqrt() C) abs() D)None of these
36. Which of the following is to analyze if a char is alpha (that is a letter) []
 A)alpha() B) isalpha() C) both D)None of these
37. Which of the following generates pseudo-random numbers []
 A)random() B) randomseed() C) num() D)None of these
38. Which of the following exit from a for, while or do...while loop, bypassing the normal loop condition []
 A)break() B) else() C) exit() D)None
39. Which of the following Transfers program flow to a labeled point in the program []
 A)goto() B) else() C) translate() D)skip()
40. Which of the following reads characters from a stream into a String []
 A)write() B) read() C) readString() D)None of these
41. setTimeout() sets the maximum milliseconds to wait for stream data, it defaults to milliseconds []
 A)1000 B) 100 C) 50000 D)150

UNIT-V

1. MQTT Stands for []
A) MQ Telemetry things B) MQ Transport Telemetry
C) MQ Transport Things D) MQ Telemetry Transport
2. MQTT isprotocol []
A) Machine to Machine B) IOT
C) Both A&B D) Machine Things
3.protocol is light weight among the following []
A) MQTT B) HTTP C) Both A&B D) Machine Things
4. XMPP full form is..... []
A) Extensible Messaging and Presence Protocol B) Extensible Module and Presence Protocol
C) Extensible Melding and Presence Protocol D)None of these
5. XMPP is used for streaming which type of elements? []
A)XPL B) XML C) XHL D)MPL
6. XMPP creates _____ identity []
A)Device B) EMAIL C) Message D)Data
7. Which protocol has a quality of service? []
A)MQTT B) XMPP C) SoAP D)HTTP
8. The original transport protocol for XMPP, []
A)FCP B) TCP C) HCP D)MCP
9. What is the role of Gateway in smart grid architecture of IoT? []
A) Store Data B) Manage data C) collect data D)security
10. What is the role of Sensor in smart grid architecture of IoT? []
A) Store Data B) Manage data C) collect data D)security
11. ____ describes the MQTT protocol []
A) Request/response B) M2M C) Publish/subscribe D) Mesh networking
12. IoT security management includes_____ []
A) Protocol abstraction B) Simple and fast installation
C) Security with hardware D) Data storage
13. IoT data scalability includes _____ []
A) Protocol abstraction B) Simple and fast installation
C) Security with hardware D)Data storage
14. According to the analysis on IoT application frame work, smart grid is divided into _____ layers. []
A)2 B) 3 C) 4 D)5
15. CoAP is specialized in _____ []
A) Internet applications B) device applications
C) wireless applications D)wired applications
16. Which layer is CoAP? []
A)Control layer B) Transport layer C) service layer D) application layer
17. Which is an open standard? []
A)HTTP B) MQTT C) XMPP D) CoAP
18. CoAP is a specialized _____ protocol. []
A) Web Transfer B) Power C) Application D) Resource
19. URI and content type support is which protocol feature? []
A) http B) UDP C) CoAP D) SPI
20. Internet is _____ []
A) A single network B) Inter-connection of local networks
C) a vast collection of different networks D) None of the above
21. Ethernet frame consists of []
A) IP address B) MAC address C) Both A & B D) None

22. DNS database contains []
 A) hostname aliases B) hostname-to-address records C) name server records D) All the above
23. Internet domain name and hostname are translated into IP address by []
 A) Domain name system B) Domain name database C) Router D) Domain information system
24. A collection of lines that connects several devices is called []
 A) Bus B) Power line C) transmission line D) cable
25. What does LTE stand for: []
 A) Long term errors B) Long term evolution C) Lengthy terminal estimation D) Long term estimates
26. Which protocol provides server push? []
 A) SPI B) MQTT C) CoAP D) HTTP
27. What is the standard length of MAC address: []
 A) 16 bits B) 32 bits C) 48 bits D) 64 bits
28. Each IP packet must contain: []
 A) Only Destination IP Address B) Only Source IP Address C) Both A & B D) None
29. Does HTTP protocol have _____ handshakes []
 A) 2 way B) 1 way C) 3 way D) 5 way
30. What is the format of IP address? []
 A) 34 bit B) 64 bit C) 16 bit D) 32 bit
31. Version 6 of IP address has how many bits []
 A) 64 B) 128 C) 32 D) 256
32. How many version /s of IP's are there? []
 A) 4 B) 3 C) 2 D) 1
33. Many desktops and operating systems include which protocol? []
 A) IPv6 protocol B) IPv4 protocol C) both A & B D) IPv3 protocol
34. Which transport layer protocols is used by DHCP? []
 A) RSVP B) TCP C) DCCP D) UDP
35. Bluetooth 5.0 promises: []
 A) 4x Speed, 2x Range, 2x Data B) 6x Speed, 3x Range, 3x Data
 C) 2x Speed, 4x Range, 8x Data D) 3x Speed, 4x Range, 8x Data
36. MAC addresses are used as _____ []
 A) Network addresses B) IP addresses
 C) Hardware addresses D) Burned in addresses
37. The original IEEE 802 MAC address comes from _____ Address []
 A) MAC B) IP C) ETHERNET D) HTTP
38. IANA stands for: []
 A) Internal Assessment Numerical Access B) Internet Association Numbers Authority
 C) International Aid for Network Automation D) Internet Assigned Numbers Authority
39. Smart Fitness clothing mainly has which device? []
 A) Battery B) Bluetooth C) sensors D) All the above
40. _____ empowers IoT by bringing together everyday objects. []
 A) Intelligence B) Connectivity C) Dynamic Nature D) Enormous Scale