

Anekant Education Society's
Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati
(Autonomous)
Department of Computer Science

Class : M.Sc.(Computer Science) – II
Paper Title : Internet of Things(IOT)

Semester : III
Paper Code : COMP5307

Question Bank

Type of Question : Objective Questions

- 1) A system on chip is an _____ circuit also known as an "IC".
 - a. integrated
 - b. distributed
 - c. separate
 - d. smallest

- 2) On a single substrate soc contains digital, analog, mixed-signal, as well as _____ functions.
 - a. sound
 - b. analog-digital
 - c. radio frequency
 - d. signal

- 3) System on Chips consumes _____ and therefore they are mostly available.
 - a. high power
 - b. more bandwidth
 - c. large signals
 - d. low power

- 4) _____ also called as shared graphics solution
 - a. Dedicated graphics
 - b. Integrated graphics
 - c. Circuit graphics
 - d. Video graphics

- 5) Three categories of Socs are: SoC built around- microcontroller, microprocessor and for _____.
 - a. any application
 - b. specific application
 - c. anything
 - d. anywhere

- 6) MPSoC stands for: _____.
- Multiprocessor System on Chip
 - Multiprocessing System on Chip
 - Multicontrolling System on Chip
 - Multiprocess System on Chip
- 7) Example of SoC for a specific application is like sound detecting device which includes an _____ converter .
- digital-to-analog
 - analog
 - analog-to-digital
 - digital
- 8) DMA controllers that transfer data between _____ device and memory.
- internal
 - register
 - external peripheral
 - serial
- 9) Software modules are integrated using _____ development environment.
- hardware
 - software
 - layer
 - system
- 10) UART stands for:_____.
- Universally Asynchronous Receiver Transmitter
 - Universal Asynchronous Receiving Transmitter
 - Universal Asynchronous Receiver Transmit
 - Universal Asynchronous Receiver Transmitter
- 11) What are the special bits added in UART while sending and receiving units?
- bytes
 - start bits
 - triangle bits
 - square bits
- 12) _____ handles communications between the CPU and other components of SoC.
- Northbridge
 - Memory
 - Register
 - Southbridge
- 13) Professional edition compute unit has
- 2 CPU cores,4096 MB main Memory
 - 1 CPU core, 2048MB main memory
 - 4 CPU core,8192 MB main memory
 - 8 CPU core,16384 MB main Memory

14) Premium edition compute unit has
a. 2 CPU cores, 4096 MB main Memory
b. 1 CPU core, 2048MB main memory
c. 4 CPU core, 8192 MB main memory
d. 8 CPU core, 16384 MB main Memory

15) FPGA stands for _____.
a. Field Programming Gate Array
b. Field Programmable Globe Array
c. Field Programmable Gate Access
d. Field Program Gate Array

16) Using _____ FPGA configuration is generally specified.
a. hardware description language
b. software description language
c. embedded style language
d. python

17) Graphic Processing Unit is also called as _____.
a. Central Processing Unit
b. Vision Processing Unit
c. Visual Processing Unit
d. Neural Processing Unit

18) Which video shifter was used to accelerate the drawing of sprite graphics for various 1970s arcade games from Taito and Midway.
Joust
a. Sinistar
b. Toshiba
c. Fujitsu's MB14241

19) APU stands for _____.
a. Acceleration Processing Unit
b. Accelerated Processed Unit
c. Accelerated Processing Unit
d. Accelerated Process Unity

20) AMDs which architecture delivers new innovation in terms of bridging the gap between CPU and GPU?
a. Homogeneous System Architecture
b. Heterogeneous System Architecture
c. Software Architecture
d. Enterprise Architecture

21) Advanced RISC Machine is a family of _____ set computing
a. RISC
b. CISC
c. HISC

d. FISC

22) Raspberry pi invented for _____

- a. Security purpose
- b. Spy purpose
- c. Education purpose
- d. Entertainment purpose

23) _____ unit is responsible for handling complex 3D games on smartphone or tablets

- a. Control Processing Unit
- b. Graphic Processing Unit
- c. Memory Processing Unit
- d. Cellular Process Unit

24) _____ is 64-bit microprocessor acts as CPU as well as graphics accelerator on single chip.

- a. Accelerated processing unit
- b. Graphic processing unit
- c. Central processing unit
- d. Field programming processing unit

25) ARM stands for _____

- a. Advanced RISC Machine
- b. Advanced Read Machine
- c. Advanced Rate Machine
- d. Advanced Rotate Machine

26) AArch64 has _____ general purpose 64-bit registers.

- a. 43
- b. 56
- c. 66
- d. 31

27) Which is not SOC product?

- a. FPGA
- b. GPU
- c. APU
- d. CPU

28) How many USB ports are present in Raspberry Pi 3?

- a. 5
- b. 2
- c. 4
- d. 3

29) WiFi is not present in which of the following models?

- a. Raspberry Pi3

- b. Raspberry Pi Zero WH
- c. Raspberry Pi Zero W
- d. Raspberry Pi Zero

30) _____ bridges the gap between CPU and GPU cores and delivers a new innovation

- a. Homogeneous System Architecture
- b. Heterogeneous System Architecture
- c. Heterogenous secure Architecture
- d. Homogeneous Secure Architecture

31) _____ port is used to connect Raspberry pi to a television or computer monitor

- a. USB
- b. Ethernet
- c. HDMI
- d. Input port

32) _____ command is used to check the raspberry pi configuration

- a. Sudo config
- b. Sudo rasp-pi configuration
- c. Sudo raspi-config
- d. Sudo raspi

33) RISC architecture require _____ transistor than CISC

- a. fewer
- b. more
- c. greater
- d. medium

34) The compute unit is called as _____.

- a. Transport multiprocessor
- b. User multiprocessor
- c. Stream multiprocessor
- d. Thread multiprocessor

35) _____ unit makes everything possible on smartphone

- a. CPU
- b. APU
- c. TPU
- d. MPU

36) The total number of GPIO pins in RPi

- a. 10
- b. 20
- c. 30
- d. 40

37) What is the speed of the UART?

- a. 4800bits/sec
- b. 1200bits/sec
- c. 12000bit/sec
- d. 9600bits/sec

38) _____ is a server-side platform built on Google Chrome's Javascript engine.

- a. Python
- b. Node.js
- c. NodeRed
- d. GPIO

39) _____ is not a Raspberry Pi Interface.

- a. UART
- b. GPIO
- c. SPI
- d. FPGA

40) The ____ command displays the beginning of a file.

- a. ls
- b. cp
- c. tail
- d. head

41) How many STOP bit are used in UART to stop the data transmission

- a. 1
- b. 1 or 2
- c. 3
- d. 4

42) SPI stands for_____.

- a. Serial Peripheral Interface
- b. Synchronous Peripheral Interface
- c. Systematic Peripheral Information
- d. Symmetric Peripheral Information

43) _____ is also called four wire communication protocol.

- a. UART
- b. SPI
- c. I2C
- d. GPIO

44) _____ pin is used to transmit data out of the SPI module.

- a. MISO
- b. MOSI
- c. SCLK
- d. SS

45) which are not the wires of SPI?

- a. MISO
- b. MOSI
- c. SCLK
- d. SDA

46) Which signal is used to select the slave in the serial peripheral interfacing?

- a. slave select
- b. master select
- c. interrupt
- d. clock signal

47) How does SPI differs from I2C?

- a. one master one slave
- b. one master many slave
- c. many master one slave
- d. many master many slave

48) Which of the following performs the START signal in I2C ?

- a. master
- b. Slave
- c. CPU
- d. memory

49) _____ condition is required when more than one master connected with the I2c Bus.

- a. start condition
- b. Repeated start condition
- c. Stretch condition
- d. Shrink condtion

50) When multiple master tries to communicate with a single slave, this is resolved by the method called _____

- a. bus stretching
- b. bus arbitration
- c. bus shrinking
- d. bus expanding

Type of Questions : Answer in One / Two Sentence

1. Define System on Chip?
2. What does FPGA stands for?
3. Which command is use Open Raspberry Pi Configuration file?
4. What is use of Cat command in Raspberry pi?
5. Define Internet of Things?
6. What is SenseIOT?

7. What is REST?
8. What is Cross Compilation?
9. Define Raspberry Pi hardware?
10. Define GPIO Programming?
11. What are the categories of SOC?
12. What is Raspberry PI?
13. What are the different Operating System of Raspberry PI?
14. What processor does Raspberry pi use?
15. What are the features of IOT?
16. What are the reasons of lack of security?
17. Why there is a need of interoperability?
18. Explain the Working of IOT?
19. What is Pulse width modulation?
20. Explain the Evolution of Industry 4.0?

Type of Questions : Short Notes

1. Write a short note on System On Chip(SOC)?
2. Write a short note on FPGA?
3. Write a short note on GPU?
4. Write a short note on Raspbian?
5. Write a short note on GPIO pins?
6. Write a short note on pulse width modulation?
7. Write a short note on XAMP protocol?
8. Write a short note on MQTT protocol in detail?
9. Write a short note on APU?
10. Write a short note on security tools for IOT?
11. Write a short note on Node RED.
12. Write a short note on COAP.
13. Write a short note on Raspberry pi in detail.
14. Write a short note on SenseIOT.
15. Write a short note on Industry 4.0?

Type of Questions : Short Answer Questions

1. Discuss the Arm 8 Architecture in detail?
2. How to configuration booting sequence & hardware in raspberry Pi model?
3. What is IOT/ Examples of IOT?
4. What are advantages & disadvantages of Raspberry pi?
5. How is raspberry pi use in IOT?
6. What is the role of COAP protocol in IOT?
7. Explain Thinger.io as IOT service platform in embedded designing?
8. Explain how this small SOC boots without BIOS.
9. Write the steps to install raspbian operating system on raspberry pi model B.
10. Explain the basic hardware components of raspberry pi?
11. Explain Cross Compiler?
12. Explain the features of node.js?
13. Explain different security tools in IOT?
14. Explain the following linux commands:ls, pwd, cat, tar, unzip.
15. What are the features of GPIO?
16. What is UART & its use in Raspberry pi?
17. How camera can be interfaced with raspberry pi?
18. What is the advantages of programming in Raspberry pi?
19. Write the python program for capture image by using camera?
20. Write simple led blinking program in python?
21. Explain the working of IOT?
22. Explain advantages & dis-advantages of IOT?
23. List & explain the examples of IOT application?
24. Explain the IOT protocols?
25. Explain the benefits of Carriots?
26. Differentiate between node.js & python?
27. Write a python program for controlling an LED with a switch?
28. What is the use of SPI & I2c interfaces on raspberry pi?
29. Explain security privacy & trust in IOT data platforms for smart cities?
30. Discuss GAMBAS middleware?

Type of Questions: Long Answer Questions

1. Discuss modes of attacks in IOT in detail?
2. Where we use of raspberry pi? Explain any two examples?
3. What is SOC? Discuss the structure of SOC?
4. Explain compute unit with block diagram?
5. Explain steps of configuring boot sequence & hardware?
6. Discuss any one programming interface used with raspberry pi?
7. What is node.js? Explain benefits of node.js.
8. Define & Explain with an example pulse width modulation.
9. Explain XMPP protocol used in IOT communication with block diagram.
10. Discuss any two real time applications of IOT.
11. Explain ARM8 architecture with block diagram?
12. Explain IOT security in detail?
13. Explain carriers as IOT service platform in embedded designing?
14. What are the different modes of attack? Explain.
15. Discuss the characteristics of SPI. How one can connect camera module using SPI.
16. Explain IOT application in home, infrastructure, security?
17. Explain Home appliances in IOT?
18. Explain the benefits of industry 4.0?
19. Explain any two data visualization tools for IOT application?
20. What are the different factors should be considered during the working of system on chip?
21. Differentiate between FPGA & GPU with respect to working point of view?
22. Describe the difference between FPGA, GPU, APU?
23. List & explain different tools used for achieving security?
24. How a raspberry pi different from a desktop computer?
25. Explain the challenges faced by IOT industry applications?

26. Explain the evolution of Industry 4.0?
27. Explain the smart home application of IOT with the figure?
28. Explain SMARTIE approach for IOT?
29. Explain data aggregation for IOT in smart cities security?
30. Explain contribution from the FP7 project?