BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY

Question Bank (K - Scheme)

Name of subject: EMERGING TRENDS IN ELECTRONICS **Unit Test :I**

Subject code: 316337 **Course : EJ**

Semester: VI

CHAPTER-1(Advanced Processors & Technology) -10Marks

(1 Marks)

1 Select the function of a GPU

A. Store data in memory

B. Draw images on the frame buffer memory

C. Encode audio signals

D. Manage network traffic

2 Select the function used to set the GPIO pin as output in ESP32

A. digitalMode(pin, OUTPUT);

B. pinMode(pin, OUTPUT);

C. setPin(pin, OUTPUT);

D. outputMode(pin);

3 The correct function used to connect ESP32 to a Wi-Fi network is

A. WiFi.connect()

B. WiFi.begin()

C. WiFi.start()

D. WiFi.init()

4 The main architectural unit responsible for controlling instruction sequence in a CPU is_____

A. ALU

B. Cache

C. Control Unit

D. Register

5 The function in an ESP32 sketch is executed only once at the beginning is

A. loop()

B. main()

C. start()

D. setup()

6 _____programming environment does NOT support ESP32

A. Arduino IDE

B. Lua

C. MicroPython

D. Raspberry Pi OS

7 For the given program select the output void setup() {
pinMode(4, OUTPUT); digitalWrite(4, HIGH);
}
void loop()
{
}
A. The LED on pin 4 blinks continuously
B. The LED on pin 4 remains OFF
C. The LED on pin 4 turns ON and stays ON
D. The LED toggles every second

8 For the program for successful compiling find out the missing element: void setup()
{
Serial.begin(115200);
if (WiFi.begin("SSID", "password"))
{
Serial.println("Connected!");
}
}
A. The inclusion of <ESP32.h>
B. The inclusion of <WiFi.h>
C. The setup() function
D. The loop() function

9 _____type of data is needed for supervised machine learning
A. Unlabelled data
B. Labelled data
C. Missing data
D. Only numeric data

10 The learning type finds hidden patterns without labels is
A. Supervised Learning
B. Unsupervised Learning
C. Reinforcement Learning
D. Network Learning

11 _____algorithm is NOT typically used in reinforcement learning
A. Temporal difference learning
B. Q-learning
C. SARSA
D. Regression

12 The quantum bit called as_____
A. Bit
B. Byte

C. Qubit
D. Quantum Byte

13 The phenomenon allows a qubit to be in both 0 and 1 is_____
A. Resistance
B. Superposition
C. Modulation
D. Reflection

14 In quantum computing, entanglement is_____
A. Error correction
B. Data copying
C. Linking qubits where one affects the other
D. Overlapping memory addresses

15 The _____unit is the foundation for exponential computational power in quantum computing
A. Byte
B. Bit
C. Qubit
D. Core

16 _____of the following is a direct application of quantum computing
A. Text editing
B. Word processing
C. Drug discovery and healthcare
D. Spreadsheet calculation

17 The main unit of information in classical computing is_____
A. Bit
B. Qubit
C. Byte
D. Symbol

18 If the ESP32 fails to connect, what status code is most likely printed?
A. WL_CONNECTED
B. WL_NO_SSID_AVAIL
C. WL_DISCONNECTED
D. WL_IDLE_STATUS

```
#include <WiFi.h>
void setup()
{
WiFi.begin("SSID", "password"); delay(10000); Serial.println(WiFi.status());
}
```

19 _____NOT an application of AI.

A. Brain-Machine interface
B. Smart machines
C. Bio-informatics
D. Weather prediction

20 The one use of GPUs in general-purpose processors is
A. Only for mobile gaming
B. Only for AI
C. General-purpose, gaming, and high-performance computing
D. No use

CHAPTER-2(Smart Manufacturing Processes and Tools) -10 Marks

(1 Marks)

1 SMT has largely replaced the_____ especially in devices that need to be small or flat.
A. pin technology
B. through-hole technology
C. plated technology
D. hole technology

2 In_____ , components are connected directly to the surface of the PCB
A. SIP (System in Package)
B. SMT (Surface Mount Technology)
C. Pin- up components
D. Plug -in components

3 Using SMT_____ density components can be placed on both sides of the circuit board.
A. higher
B. Lower
C. Medium
D. Zero

4 If SMD component has two leads and for placement it is specified as 0603 , then 0603 means_____
A. Length is 0.6 mm with width 0.3mm
B. Length is 0.3 mm with width 0.6 mm
C. 06 Ohm with 03 A rating
D. 06 Volt with 03 A rating

5 The_____ check looks at all the design specifications of a PCB.

A. Automatic Optical Inspection (AOI)

B. Design for manufacturability check (DFM)

C. Electrostatic Discharge (ESD)

D. Surface Mount Devices (SMD)

6 In the PCB assembly process, in the solder paste printer, a mechanical fixture holds the PCB and_____ in place.

A. Solder stencil

B. Solder paste

C. Solder flux

D. Solder gun

7 _____is an efficient inspection method for larger batches of PCB Assembly.

A. Automatic optical inspection

B. Manual inspection

C. Automatic X-ray inspection

D. Operator inspection

8 _____technology enables collaboration between humans and robots.

A. Cloud Computing

B. Cobots (Collaborative Robots)

C. 3D Printing

D. RFID

9 Robots in smart manufacturing perform:_____

A. Administrative tasks

B. Automated and repetitive operations

C. Data encryption

D. Financial accounting

10 With growing global manufacturing waste of electronics manufacturing _____has to be addressed on priority.

A. Environmental impact

B. Political impact

C. Social impact

D. Financial impact

11 WEEE or e-waste is -_____

A. Waste Mechanical and Electronic Equipment

B. Waste Biological and Electronic Equipment

C. Waste Surgical and Electronic Equipment

D. Waste Electrical and Electronic Equipment

12 _____and_____ standards are used for certifying manufacturing material.

A. RoHS and EPEAT
B. FPEAT and RoHS
C. IEEE and ASCII
D. TRIA and EPEAT

13 EPEAT evaluates products into three tiers of environmental performance:
A. Bronze, Silver and Mercury
B. Bronze, Nickel and Gold
C. Bronze, Silver and Gold
D. Bronze, Platinum and Gold

14 EPEAT do not audit which of the following product categories:_____
A. Computers and Displays
B. Imaging Equipment
C. Mobile Vanity
D. Mobile Phones

15 _____tool is commonly used for PCB design in open-source assembly and testing.
A. KiCad
B. Verilator
C. MATLAB
D. AutoCAD

16 SkyWater 130nm is an example of:_____
A. A microprocessor
B. A Process Design Kit (PDK)
C. A PCB manufacturing company
D. A soldering tool

17 _____tool is used for open-source circuit simulation.
A. Ngspice
B. Photoshop
C. Excel
D. Blender

18 For Complex 3D movements like welding, painting, and machining_____ Robots are used.
A. SCARA Robot
B. Articulated Robot
C. Autonomous Mobile Robot (AMR)
D. Cobots

19 _____type of robots are mainly used for Pick-and-place, assembly, and precision operations.
A. Articulated Robot
B. Autonomous Mobile Robot (AMR)
C. SCARA Robot

D. Cobots

20 _____type of robot can move independently across the factory floor using sensors and navigation systems.
A. Articulated Robot
B. SCARA Robot
C. Autonomous Mobile Robot (AMR)
D. Cobots

CHAPTER-3(Next Generation Telecom Network) -10 Marks

(1 Marks)

1 Number of layers in NGN architecture are
A. 7
B. 6
C. 5
D. 4

2 In NGN, the interface not supporting media interaction is
A. UNI
B. ANI
C. NNI
D. SNI

3 OTN supports bitrate upto_____
A. 400Gbps
B. 100 Gbps
C. 200 Kbps
D. 500 Mbps

4 5.5G, also known as 5G-Advanced, is a bridge technology that builds upon_____ standard.
A. 3GPP Release 15
B. 3GPP Release 16
C. 3GPP Release 18
D. 3GPP Release 19

5 Layers of NGN are
A. Access, Transport, Control, Service Layer
B. Physical, Data link, Network, Session Layer
C. Application, Session, Data link, Network, Transport, layer
D. Network, Application Layer

6 In NGN CDF (Content Delivery Function) is a function of
A. Transport Stratum
B. Service Stratum
C. Transport and Service stratum
D. Not from above

7 Media Gateways are located in _____ layer of NGN.
A. Access
B. Control
C. Transport
D. Not from above

8 _____ multiplexing is used in 3G.
A. FDMA
B. CDMA
C. TDMA
D. Not From Above

9 Frequency range in FM Broadcast is
A. 1.711MHz-30.0 MHz
B. 520MHz – 1610 MHz
C. 148.5KHz-283.5KHz
D. 87.5 MHz-108.0 MHz

10 MPLS header length is a field of _____ bits.
A. 32
B. 24
C. 20
D. 8

11 Identify time required to transmit 8000 f/sec in STM-1
A. 125µsec
B. 200 µsec
C. 100 µsec
D. 150 µsec

12 The use of EXP (Experimental) bits are
A. Quality of service
B. Avoid a packet being stuck in a routing loop
C. Receiving, transmitting a labeled packet on a data link.
D. Not from above

13 Data speed in 5G is _____
A. More than 1Gbps
B. 64Kbps
C. 2 Mbps

D. 4 Kbps

14 SDH is _____
A. Session layer Protocol
B. Transport layer Protocol
C. Service Protocol
D. Application Protocol

15 TTL in a MPLS label is
A. Transistor Transistor Logic
B. Time To Live
C. Technology Transfer Layer
D. Not from above

16 In FTTH, telemedicine is_____ service.
A. Symmetric
B. Balanced
C. Asymmetric
D. Unbalanced

17 In what type of network architecture does an OLT play a critical role?
A. A local area network (LAN).
B. A wide area network (WAN).
C. A passive optical network (PON).
D. A cellular communication network.

18 _____ is the primary function of an OLT.
A. To convert customer premises signals to a standard format for the PON.
B. To manage multiplexing and signal conversion for the PON system.
C. To provide optical services to end-users.
D. To act as a passive optical splitter.

19 The protection Scheme in an OTN network is defined by:
A. G 709
B. G 873.1
C. G 798
D. G 872

20 Synchronous Digital Hierarchy provides the feature like:
A. Performance Monitoring.
B. Network Management
C. Protection facility
D. WDM Multiplexing.