1. In a three layered structure of embedded systems arrange the layers from outer to inner

(i) Hardware

(ii) Application software

(iii) Operating system

A. (iii), (i), (ii)
B. (ii), (iii), (i)
C. (i), (ii), (iii)
D. (i), (iii), (ii)

2. Which out of following is used to collect and process the data to detect the changes in the physical status of things?

A. Nano Technology
B. Actuators
C. Sensors
D. RFIDs

3. Which out of following is not having power saving mode

A**. Micro processors**
B. Microcontroller
C. Embedded systems
D. Timer

4. The output voltage of an open-loop differential amplifier is equal to

A. Double the difference between the two input voltages
B. Product of voltage gain and individual input voltages
C. Product of voltage gain and the difference between the two input voltages
D. Double the voltage gain and the difference between two input voltage

5. The amplitude of the passing signal at cutoff frequency is

A. 31.8%
B. 63.3%
C. 68.9%
D. 70.7%

6. Which out of the following is incorrect statement about filters?

A. Low pass filters attenuates high frequencies
B. Lower cutoff frequency is decided by high pass filter in band pass filters
C. Higher cutoff frequency is decided by high pass filters in band pass filters
D. High pass filters pass signals of higher frequency than cutoff frequency

7. Given the lower and higher cut-off frequency of a band-pass filter are 12.5kHz and 20kHz. Determine its bandwidth.

a) 750 Hz

b) 7500 Hz

c) 75000 Hz

d) None of the mentioned

8. Find the cut off frequency for an RC HIGH PASS FILTER of R=8.2KΩ and C=0.0033μF?

a) 6KHz

b) 5.88KHz

c) 4.26KHz

d) 7.91KHz

9. In band pass filter which following statements are correct

I. at center frequency maximum attenuation of signal

II. at cutoff frequency maximum attenuation of signal.

III. both the low-pass and high-pass filter sections are of the "T" configuration

IV. The frequency of maximum attenuation is called the notch frequency.

A. (iv), (ii), (i) B. (ii), (i), (iii)
C. (i), (ii), (iii) **D. (i), (iii), (iv)**

10. Which of the following is true about cloud computing?

I. Cloud Computing refers to manipulating, configuring, and accessing the hardware and software resources remotely

II. Examples are CMRR

III. Cloud Computing makes our business applications mobile and collaborative.

IV. It offers online data storage, infrastructure, and application

A. (iv), (ii), (i) B. (ii), (i), (iii)

C. (i), (ii), (iii) **D. (i), (iii), (iv)**

11. Which of the following is NOT an embedded system.

(a) Arduino Board

(b) Raspberry pi Board

(c) **Intel i3 processor**

(d) Automatic Teller Machine

12. Which of the following is best suited for mathematical operations?

A. General Purpose Processor

B. ASIC

C. System on chip

D. Digital Signal Processor

13. Which of the following register stores the address of the next instruction to be executed?

A. Accumulator

B. Program Counter

C. Stack pointer

D. Address Register

14. Which of the Operating System is followed the Scheduling on Priority basis with time bound.

A.RTOS

B.GPOS

C. Windows

d. Ubuntu

15 A comparator with a trip point of zero is sometimes called

a. Threshold detector

b. Zero-crossing detector

c. Positive limit detector

d. Half-wave detector

16 With both bases grounded, the only offset that produces an error is the

a. Input offset current

b. Input bias current

c. Input offset voltage

d. β

17 The output stage of an op amp is usually

a. Differential amp

b. Complementary push-pull amplifier

c. CE amplifier

d. Swamped amplifier

18 Find the input voltage of an ideal op-amp. It's one of the inputs and output voltages are 2v and 12v. (Gain=3)

a) 8v
b) 4v
c) -4v
d) -2v

19 If R=10K ohm and Xc =20Kohm in low pass filter ,Find the output of the filter if input voltage is 10V.

A) 5.66V

B) 6.66V

C) 3.33V

D) 6.33V

20 Why OP-AMP IC is named 741.

A) As it has input resistance and low output resistance

B) As it is of 12 pin IC sum of 7,4,and 1

C) As it has 7 useful pins with 4 inputs and 1 output

D) It has 7 amplifiers with 4 stages

21 The **Level shifting stage** is used to

A) Bring the dc level to zero volts with respect to ground.

B) Amplifies the dc level to get the output voltage.

C) Mapping the collector resistance with the emitter resistance

D) None of the above

22 The voltage follower has

a. Closed-loop voltage gain of unity

b. Small open-loop voltage gain of unity

c. Closed-loop bandwidth of zero

d. Large closed-loop output impedance

23 If an OP-AMP has differential input voltage is 1mV and frequency of signal is 1KHz ,Find the slew rate .

A) 5.4 V/μs

B) 4.5 V/s

C) 6.28 V/s

D) 6.82 V/μs

24 The CPS stands for

A) Cloud-Physical System

B) **Cyber-Physical System**

C) Cyber-protocol System

D) None of above

25 In an averaging amplifier, the input resistance is, if feedback resistance is 10k ohm with V1=2V and V2 =5V

A) less than the feedback resistance

B) equal to the feedback resistance

C) greater than the feedback resistance

D) unequal

26. Which statement(s) are true for Virtual Short concept in OP-AMP

a) The input impedance of an OP-AMP is ideally infinite. Hence current flowing from one input terminal to the other will be zero.

b) The voltage drop across Ri will be zero and both the terminals will be at the same potential.

c) Input terminals are virtually shorted to each other

d) All of the above.