

VCRP – 2025

Aptitude Test Guidelines

Aptitude test will be conducted on computer on **13/3/2025 at 9:00 AM** in college campus Sandipani Technical Campus Faculty of Engineering, Nanded Road, Kolpa, Latur.

Exam Pattern:

Exam Paper: Branch wise

Total Marks: 25 (General Aptitude-15, Technical Aptitude- 10)

Exam Duration: 30 Mins.

Note: Kindly bring Receipt, your college ID-Card/any other ID proof

Venue: Computer Labs, Sandipani Technical Campus Faculty of Engineering, Kolpa, Latur

Technical Questions: 10 Marks

Any of the Following 10 Questions will be asked.

1) The most commonly used semiconductor material is:

- a) Germanium
- b) Silicon**
- c) Gallium
- d) Carbon

ANS:b

2) The basic unit of data storage is:

- a) Byte
- b) Bit**
- c) Word
- d) Register

ANS:b

3) Which of the following is correct about semiconductors in electronic devices?

a) Elemental semiconductors have direct band gap

b) Compound semiconductors have indirect band gap

c) Extrinsic semiconductors are injected with impurities

d) Doping is done in Intrinsic semiconductors

ANS:c

4) Which of the following technique can't be used for generating electron-hole pairs in electronic devices?

a) Thermal excitation

b) Impact ionization

c) Photo excitation

d) Impurity injection

ANS:d

5) Forbidden Energy gap (EG) of a semiconductor in electronic devices depends on which of the following factors?

a) Inter atomic distance

b) Material constant

c) Electron affinity

d) Recombination and Generation

ANS:a

6) Which of the following is the correct expression of current in an intrinsic semiconductor electronic circuit?

$$\mathbf{I_{Total} = I_e + I_h}$$

- b) $I_{\text{Total}} = I_e - I_h$
- c) $I_{\text{Total}} = I_e + 2I_h$
- d) $I_{\text{Total}} = 2I_e + I_h$

ANS:a

- 7) In which region does BJT act as the OFF switch in electronic circuits?
- a) Cut-off
 - b) Saturation**
 - c) Active
 - d) Reverse saturation

ANS:b

- 8) Which of the following semiconductor is mostly used to construct electronic circuits?
- a) Silicon**
 - b) Germanium
 - c) Selenium
 - d) Tin

ANS:a

- 9) In which of the following region does BJT act as the amplifier electronic device?
- a) Cut-off
 - b) Saturation
 - c) Active**
 - d) Reverse saturation

ANS:c

- 10) Which of the following type of transistor is preferred in digital and analog electronic circuits?

- a) BJT
- b) JFET
- c) MOSFET**
- d) FET

ANS:c

11) Which of the following diode is used in ultra-high speed switching electronic circuits?

- a) Zener diode
- b) Varactor diode
- c) Tunnel diode**
- d) Schottky diode

ANS:c

12) Which of these flip – flops cannot be used to construct a serial shift register?

- a) D – flip flop
- b) SR flip – flop
- c) T flip – flop**
- d) JK flip – flop

ANS:c

13) Which of the following microcontrollers is widely used in embedded systems?

- a) 8086
- b) 8051**
- c) Pentium
- d) Core i7

ANS:b

14) The decimal equivalent of the binary number $(1011.011)_2$ is _____

a) **$(11.375)_{10}$**

b) $(10.123)_{10}$

c) $(11.175)_{10}$

d) $(9.23)_{10}$

ANS:a

15) What is the group of 1s in 4 cells of a K – map called?

a) Pair

b) **Quad**

c) Octet

d) Octave

ANS:b

16) Which of the following digital logic circuits can be used to add more than 1 – bit simultaneously?

a) Full – adder

b) **Ripple – carry adder**

c) Half – adder

d) Serial adder

ANS:b

17) Which of the following gives the correct number of multiplexers required to build a 32×1 multiplexer?

a) **Two 16×1 mux**

b) Three 8×1 mux

c) Two 8×1 mux

d) Three 16×1 mux

ANS:a

18) What will be the output from a D flip – flop if the clock is low and $D = 0$?

a) 0

b) 1

c) No change

d) Toggle between 0 and 1

ANS:c

19) What are the basic gates in MOS logic family?

a) NAND and NOR

b) AND and OR

c) NAND and OR

d) AND and NOR

ANS:a

20) Which type of diode is used for voltage regulation?

a) Zener Diode

b) Schottky Diode

c) Tunnel Diode

d) PIN Diode

ANS: a

21) The largest two digit hexadecimal number is _____

a) $(FE)_{16}$

b) $(FD)_{16}$

c) $(FF)_{16}$

d) $(EF)_{16}$

ANS:c

22) What value is to be considered for a “don’t care condition”?

a) 0

- b) 1
- c) Either 0 or 1**
- d) Any number except 0 and 1

ANS:c

23) The instruction set of a microcontroller is stored in:

- a) RAM
- b) ROM**
- c) Hard Disk
- d) Registers

ANS:b

24)AM stands for:

- a) Amplitude Modulation**
- b) Analog Multiplexing
- c) Amplitude Mixing
- d) Amplitude Measurement

ANS: a

25) The opposition to the flow of alternating current is called:

- A) Resistance
- B) Reactance
- C) Impedance**
- D) Capacitance

Answer: c

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
B	B	C	D	A	A	B	A	C	C	C	C	B

Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q	
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A	B	B	A	C	A	A	C	C	B	A	C	