VCRP - 2024

Round 1: Aptitude Test on 14/3/2024 at College Campus

Aptitude Test Guidelines

Aptitude test will be conducted on computer on **14/3/2024 at 10:30 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

E&TC/Electronics/Medical Electronics Branch Question Bank

Technical Questions: 10 Marks
Subject: BEE

Any of the Following 10 Questions will be asked.

1)   Which of the following is not a physical component of an electronic circuit?

a)   Capacitor

b)   Inductor

c)   Diode

d)   Temperature

2)   Which of the following is not a property of semiconductors used in electronic devices?

a)   They excite electrons

b)   They don't emit light

c)   They have high thermal conductivity

d)   They have variable electrical conductivity

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

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

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

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

a) $I_{Total} = I_e + I_h$

b) $I_{Total} = I_e - I_h$

c) $I_{Total} = I_e + 2I_h$

d) $I_{Total} = 2I_e + I_h$

7)   In which region does BJT act as the OFF switch in electronic circuits?

a) Cut-off

b) Saturation

c) Active

d) Reverse saturation

8)   Which of the following semiconductor is mostly used to construct electronic circuits?

a)   Silicon

b)   Germanium

c)   Selenium

d)   Tin

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

10)   Which of the following type of transistor is preferred in digital and analog electronic circuits?
a) BJT
b) JFET
c) MOSFET
d) FET

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

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

13)   Which of the following is an example of a digital Electronic?

a)   Computers

b)   Information appliances

c)   Digital cameras

d)   All of the mentioned

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) $(9.23)_{10}$

15) What is the group of 1s in 4 cells of a K – map called?
a) Pair
b) Quad
c) Octet
d) Octave

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

17) Which of the following gives the correct number of multiplexers required to build a 32 x 1 multiplexer?
a) Two 16 x 1 mux
b) Three 8 x 1 mux
c) Two 8 x 1 mux
d) Three 16 x 1 mux

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

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

20)   Which of these pins will allow to activate and deactivate a multiplexer?
a) Enable pin
b) Selection pin
c) Logic pin
d) Preset pin

21)   The largest two digit hexadecimal number is _____
a) $(FE)_{16}$
b) $(FD)_{16}$
c) $(FF)_{16}$
d) $(EF)_{16}$

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

23)   In Digital Circuits, which of the following options represent the synchronous control inputs in a T flip flop?
a) T
b) 0
c) Clock
d) 1

24) What kind of operation occurs in a J – K flip flop when both inputs J and K are equal to 1?
a) Preset operation
b) Reset operation
c) Clear operation

25) During reverse bias, a small current develops known as
a) Forward current
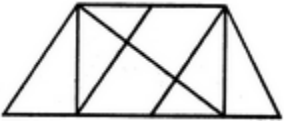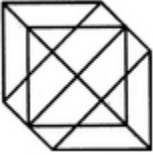b) Reverse current
c) Reverse saturation current
d) Active current

Aptitude Test Question Bank

Aptitude Questions: 15 Marks	
Any of the Following 15 Questions will be asked.	
Q1	Which number should come next in the series, 48, 24, 12, ...? A. 8 B. 6 C. 4 D. 2
Q2	If 9th of the month falls on the day preceding Sunday, then on what day will 1st of the month fall? **A.** Friday **B.** Saturday **C.** Sunday **D.** Monday
Q3	Find the remainder when 6799 is divided by 7. **A.** 4 **B.** 6 **C.** 1 **D.** 2
Q4	The cost of setting up a magazine is Rs. 2800. The cost of paper and ink etc is Rs. 80 per 100 copies and printing cost is Rs. 160 per 100 copies. In last month 2000 copies were printed but only 1500 copies could be sold at Rs. 5 each. Total 25% profit on the sale price was realized. There is one more resource of income from magazine which is advertising. What sum of money obtained from the advertising in magazine? A. 1750 B. 2350 C. 1150 D. 1975
Q5	Avinash covers a distance of 8km in 50 minutes. If he covers

	3km distance in 2/5th of time then, What speed should he maintain to cover the remaining distance in the remaining time?
	A. 13 kmph B. 15 kmph C. 14 kmph **D. 11 kmph**
Q6	Find the odd man out? 396, 462, 572, 427, 671, 264.
	A. 427 B. 671 C. 462 D. 264
Q7	If in a certain language, NOIDA is coded as OPJEB, how is DELHI coded in that language?
	A. CDKGH B. EFMIJ C. FGNJK D. IHLED
Q8	Odometer is to mileage as compass is to
	A. speed B. hiking C. needle D. direction
Q9	Window is to pane as book is to
	A. page B. novel C. glass D. cover
Q10	Reptile is to lizard as flower is to
	A. petal B. stem C. daisy D. alligator
Q11	Tanya is older than Eric. Cliff is older than Tanya. Eric is older than Cliff.

	If the first two statements are true, the third statement is
	A. true B. false C. uncertain D. none
Q12	Find the number of triangles in the given figure.
	A. 8 B. 10 C. 12 D. 14
Q13	Find the number of triangles in the given figure.
	A. 18 B. 20 C. 24 D. 27
Q14	What is the number of triangles that can be formed whose vertices are the vertices of an octagon but have only one side common with that of octagon?
	A. 64 B. 32 C. 24 D. 16
Q15	Even if it rains I shall come means ......
	A. if I come it will not rain B. if it rains I shall not come C. I will certainly come whether it rains or not D. whenever there is rain I shall come
Q16	I felt somewhat more relaxed ......
	A. but tense as compared to earlier B. and tense as compared to earlier C. as there was already no tension at all

	D. and tension-free as compared to earlier E. because the worry had already captured by mind
Q17	"The food in this hotel is no match to what were forced at late hours in Hotel Kohinoor " means ......
	A. The food in this hotel is quite good compared to what we ate at kohinoor B. Hotel kohinoor served us good quality food than what we get here C. Both hotels have maintained good quality of food D. Both hotels serve poor quality of food E. it is better to eat food than remain hungry
Q18	The cost price of 20 articles is the same as the selling price of x articles. If the profit is 25%, then the value of x is:
	A. 16 B. 15 C. 18 D. 25
Q19	In a certain store, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, approximately what percentage of the selling price is the profit?
	A. 30% B. 70% C. 100% D. 250%
Q20	A vendor bought toffees at 6 for a rupee. How many for a rupee must he sell to gain 20%?
	A. 3 B. 4 C. 5 D. 6
Q21	A sum of money is to be distributed among A, B, C, D in the proportion of 5 : 2 : 4 : 3. If C gets Rs. 1000 more than D, what is B's share?
	A. Rs. 500 B. Rs. 1500 C. Rs. 2000

	D. None of these
Q22	Catching the earlier train will give us the ...... to do some shopping.
	A. chance B. luck C. possibility D. occasion
Q23	The grapes are now ...... enough to be picked.
	A. ready B. ripe C. mature D. advanced
Q24	Success in this examination depends ...... hard work alone.
	A. at B. over C. for D. on
Q25	If you smuggle goods into the country, they may be ...... by the customs authority.
	A. confiscated B. possessed C. punished D. fined
Q26	Peter is twice as good as workman as Tom. When they work together they can finish a task in 16 days. If Tom works alone, in many days he will complete the task?
	A. 46 days B. 48 days C. 50 days D. 52 days
Q27	A man purchases a TV for Rs. 8000 and sells it at 10% loss. What is the selling price of T.V?
	A. Rs.7200 B. Rs.7000 C. Rs.6900 D. Rs.6500

Q28	Sohan has borrowed Rs. 5000 at the rate of 6% S.I. what amount he needs to pay after 3 years to clear the debt?
	A. Rs. 5500 B. Rs. 5900 C. Rs. 6100 D. Rs. 6300
Q29	Find the HCF of 210, 385, and 735.
	A. 7 B. 14 C. 21 D. 35
Q30	Find the missing letters in the series, GAH, IBJ, KCL, MDN, ___.
	A. OEG B. OEP C. OEB D. OEA
Q31	Which letter should come next in the series F,G,H,J,K,L,M,N,P,_?
	A. Q B. R C. T D. O
Q32	Synonyms of Fake
	A. Imitation B. Fair C. Flair D. Fact
Q33	Antonym of Extend
	A. Condense B. Expand C. Congestion D. Convert

Q34	Rohan and Rohit are twin brothers, but they do not look ......
	A. unique B. different C. likely D. alike
Q35	n the first 10 overs of a cricket game, the run rate was only 3.2. What should be the run rate in the remaining 40 overs to reach the target of 282 runs?
	A. 6.25 B. 6.5 C. 6.75 D. 7
Q36	A grocer has a sale of Rs. 6435, Rs. 6927, Rs. 6855, Rs. 7230 and Rs. 6562 for 5 consecutive months. How much sale must he have in the sixth month so that he gets an average sale of Rs. 6500?
	A. Rs. 4991 B. Rs. 5991 C. Rs. 6001 D. Rs. 6991
Q37	The average of 20 numbers is zero. Of them, at the most, how many may be greater than zero?
	0 1 10 19
Q38	The average weight of 8 person's increases by 2.5 kg when a new person comes in place of one of them weighing 65 kg. What might be the weight of the new person?
	A. 76 kg B. 76.5 kg C. 85 kg D. Data inadequate E. None of these
Q39	Mr. Thomas invested an amount of Rs. 13,900 divided in two different schemes A and B at the simple interest rate of 14% p.a.

	and 11% p.a. respectively. If the total amount of simple interest earned in 2 years be Rs. 3508, what was the amount invested in Scheme B?
	A. Rs. 6400 B. Rs. 6500 C. Rs. 7200 D. Rs. 7500 E. None of these
Q40	How much time will it take for an amount of Rs. 450 to yield Rs. 81 as interest at 4.5% per annum of simple interest?
	A. 3.5 years B. 4 years C. 4.5 years D. 5 years
Q41	Reena took a loan of Rs. 1200 with simple interest for as many years as the rate of interest. If she paid Rs. 432 as interest at the end of the loan period, what was the rate of interest?
	A. 3.6 B. 18 C. 6 D. Cannot be determined E. None of these
Q42	From a group of 7 men and 6 women, five persons are to be selected to form a committee so that at least 3 men are there on the committee. In how many ways can it be done?
	A. 564 B. 645 C. 735 D. 756 E. None of these
Q43	In how many ways can the letters of the word 'LEADER' be arranged?
	A. 72 B. 144 C. 720 D. 360

	E. None of these
Q44	If log 2 = 0.3010 and log 3 = 0.4771, the value of log5 512 is:
	A. 2.870
	B. 2.967
	C. 3.876
	D. 3.912
Q45	Find the odd man out
	8, 27, 64, 100, 125, 216, 343
	A. 27
	B. 100
	C. 125
	D. 343