

VCRP - 2026

Round 1: Aptitude Test on 14/03/2026 at College Campus

Aptitude Test Guidelines

Aptitude test will be conducted on computer on **14/3/2026** 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 - 10)

Exam Duration: 30 Mins.

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

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

Polytechnic E&TC Engineering Branch Question Bank

Technical Questions – 10 marks	
Q1	Objective type questions. (Compulsory Question)
1	The current in a PN junction diode is mainly due to: A) Majority carriers B) Minority carriers C) Holes only D) Electrons only Answer: A
2	The cut-in voltage of a silicon diode is approximately: A) 0.3 V B) 0.7 V C) 1.1 V D) 2 V Answer: B
3	Zener diode operates in which region? A) Forward region B) Breakdown region C) Cut-off region D) Saturation region Answer: B

4	In a BJT, the emitter is: A) Lightly doped B) Moderately doped C) Heavily doped D) Intrinsic Answer: C
5	The current gain of CB configuration is: A) α B) β C) γ D) μ Answer: A
6	Pinch-off voltage occurs in: A) BJT B) MOSFET C) JFET D) Zener Answer: B
7	MOSFET has _____ input impedance. A) Low B) Medium C) Very high D) Zero Answer: C
8	In rectifier, ripple factor should be: A) Maximum B) Minimum C) Unity D) Zero Answer: B
9	SCR stands for: A) Silicon Controlled Rectifier B) Semiconductor Control Resistor C) Signal Controlled Rectifier D) Silicon Current Regulator Answer: A
10	In voltage regulator, Zener diode is connected in: A) Series B) Parallel C) Both D) None Answer: B
11	The frequency response of amplifier is shown by: A) Load line B) Bode plot C) I-V curve D) Transfer curve Answer: B
12	FET drain current equation follows: A) Ohm's law B) Shockley equation C) Kirchhoff's law D) Thevenin theorem Answer: B
13	Depletion MOSFET works in: A) Enhancement mode only B) Depletion mode only C) Both modes D) None Answer: B
14	Avalanche breakdown occurs due to: A) Tunneling B) Impact ionization C) Heating D) Doping Answer: B
15	CE amplifier output is: A) In-phase B) 180° out of phase C) 90° shift D) No shift Answer: B
16	1's complement of 1010 is: A) 0101 B) 1010 C) 1111 D) 0000 Answer: A
17	Basic logic gates are: A) AND, OR, NOT B) NAND, NOR C) XOR, XNOR D) Buffer Answer: A

18	De Morgan's theorem is used for: A) Simplification C) Counting Answer: A	B) Coding D) Memory
19	Full adder consists of: A) 1 half adder C) 3 half adders Answer: B	B) 2 half adders D) None
20	Flip-flop is a: A) Combinational circuit C) Linear circuit Answer: B	B) Sequential circuit D) Passive circuit
21	T flip-flop is used in: A) Amplifier C) Oscillator Answer: B	B) Counter D) Rectifier
22	Multiplexer selects: A) One input C) Memory Answer: A	B) Many outputs D) Clock
23	Decoder converts: A) Binary to decimal C) Analog to digital Answer: A	B) Decimal to binary D) None
24	Shift register is used for: A) Data storage C) Both Answer: C	B) Data shifting D) None
25	K-map is used for: A) Coding C) Counting Answer: B	B) Simplification D) Storing
26	Propagation delay is: A) Switching time C) Transition time Answer: A	B) Storage time D) Response time
27	CMOS stands for: A) Complementary MOS C) Control MOS Answer: A	B) Combined MOS D) Current MOS
28	Asynchronous counter is also called: A) Ripple counter C) Johnson counter Answer: A	B) Ring counter D) Synchronous counter
29	Gray code changes: A) Two bits at a time C) Three bits Answer: B	B) One bit at a time D) All bits
30	Latch is: A) Edge triggered C) Clockless memory Answer: C	B) Level triggered D) Both B & C

31	<p>The unit of electric charge is:</p> <p>a) Volt b) Ampere c) Coulomb d) Ohm</p> <p>Answer:c</p>
32	<p>Binary equivalent of decimal number 10 is:</p> <p>A) 1010 B) 1001 C) 1100 D) 1110</p> <p>Answer:A</p>
33	<p>How many inputs does an XOR gate have in basic form?</p> <p>a) 1 b) 2 c) 3 d) 4</p> <p>Answer: b) 2</p>
34	<p>The unit of power is:</p> <p>a) Watt b) Volt c) Ampere d) Joule</p> <p>Answer: a) Watt</p>
35	<p>The device used to measure electric current is:</p> <p>a) Voltmeter b) Ammeter c) Wattmeter d) Galvanometer</p> <p>Answer: b) Ammeter</p>
36	<p>In AC circuit, RMS value of current is equal to:</p> <p>a) Peak value b) $0.707 \times$ Peak value c) $1.414 \times$ Peak value d) Zero</p> <p>Answer: b) $0.707 \times$ Peak value</p>
37	<p>A 4-bit binary counter can count up to:</p> <p>a) 8 b) 15 c) 16 d) 4</p> <p>Answer: c) 16</p>
38	<p>The input resistance of an ideal op-amp is:</p> <p>a) Zero b) Infinite c) Very low d) 1Ω</p> <p>Answer: b) Infinite</p>
39	<p>A Zener diode is mainly used for:</p> <p>a) Amplification b) Rectification c) Voltage regulation d) Oscillation</p> <p>Answer: c) Voltage regulation</p>
40	<p>In a PN junction diode, depletion region is formed due to:</p> <p>a) Free electrons b) Holes c) Immobile ions</p>

	d) External voltage Answer: c) Immobile ions
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