

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 Mechanical Engineering Branch Question Bank

Technical Questions – 10 marks

1. Which of the following is a casting defect caused by trapped gases?

- A) Blow holes B) Misrun C) Cold shut D) Shift

Answer: A

2. In sand casting, the function of a riser is to:

- A) Provide molten metal to compensate for shrinkage B) Allow escape of gases C) Support the core D) Form the gating system

Answer: A

3. The process of forcing molten metal under high pressure into a mold is called:

A) Sand casting B) Die casting C) Investment casting D) Centrifugal casting

Answer: B

4. Hot working processes are carried out:

A) Below recrystallization temperature B) Above recrystallization temperature C) At room temperature D) Below melting point only

Answer: B

5. Which process is used to produce seamless tubes and pipes?

A) Rolling B) Forging C) Extrusion D) Piercing followed by extrusion/rolling

Answer: D

6. Upset forging is primarily used to: A) Increase length of the workpiece B) Increase diameter of a portion of the workpiece C) Reduce cross-section D) Produce threads

Answer: B

7. The main advantage of cold working over hot working is:

A) Better surface finish and dimensional accuracy B) Lower required force C) Higher ductility
D) No work hardening

Answer: A

8. In lathe, the operation of enlarging an existing hole is called:

A) Drilling B) Boring C) Reaming D) Tapping

Answer: B

9. Which machining process uses a rotating multi-point cutting tool?

A) Turning B) Milling C) Drilling D) Grinding

Answer: B

10. The process used to produce very smooth surface finish with high accuracy is:

A) Turning B) Milling C) Grinding D) Shaping

Answer: C

11. In arc welding, the electrode is consumed in:

A) TIG welding B) MIG welding C) Submerged arc welding D) Both B and C

Answer: B (MIG)

12. Which welding process uses a non-consumable electrode and inert gas shielding?

A) MIG B) TIG C) Stick welding D) Gas welding

Answer: B

13. The purpose of flux in welding is to:

A) Prevent oxidation B) Increase arc stability C) Remove impurities D) All of the above

Answer: D

14. Which of the following is a resistance welding process?

A) Spot welding B) Gas welding C) Arc welding D) Thermit welding

Answer: A

15. In manufacturing, mass production is best suited for:

A) Job shop production B) Batch production C) Continuous production D) Flexible manufacturing

Answer: C

16. Jigs are primarily used to:

A) Hold the workpiece B) Guide the tool C) Both A and B D) Measure dimensions

Answer: B (Fixtures hold, jigs guide + hold)

17. The tool signature in single point cutting tool is expressed in:

A) ASA system B) Orthogonal rake system C) Both A and B D) None

Answer: C

18. Which process is used for producing long continuous products like rods and wires?

- A) Extrusion B) Drawing C) Rolling D) Forging

Answer: B

19. In centrifugal casting, the mold is rotated to:

- A) Achieve better surface finish B) Distribute molten metal uniformly C) Reduce porosity
D) All of the above

Answer: D

20. The main limitation of powder metallurgy is:

- A) High cost of powders B) Difficulty in producing complex shapes C) Low density of final product D) Poor mechanical properties

Answer: A

21. The science of measurement is called:

- A) Meteorology B) Metrology C) Morphology D) Metallurgy

Answer: B

22. The degree of closeness of the measured value to the true value is known as:

- A) Precision B) Accuracy C) Sensitivity D) Resolution

Answer: B

23. A micrometer is used to measure:

- A) External dimensions only B) Internal dimensions only C) Both external and internal (with attachments) D) Depth only

Answer: C

24. Dial gauge is a type of:

- A) Direct measuring instrument
- B) Indirect/comparison instrument
- C) Absolute instrument
- D) End standard

Answer: B

25. Surface roughness is measured by:

- A) CLA value
- B) RMS value
- C) Both A and B
- D) Only peak count

Answer: C

26. Sine bar is used with:

- A) Slip gauges for angle measurement
- B) Vernier height gauge
- C) Both A and B
- D) Only for flatness

Answer: C

27. Which of the following has highest accuracy?

- A) Steel rule
- B) Vernier caliper
- C) Micrometer
- D) Slip gauges

Answer: D

28. A kinematic pair consisting of two elements having surface contact is called:

- A) Lower pair
- B) Higher pair
- C) Sliding pair
- D) Turning pair

Answer: A

29. In a four-bar chain, if the shortest link is fixed, it is known as:

- A) Double crank mechanism
- B) Crank-rocker mechanism
- C) Double rocker mechanism
- D) Drag link mechanism

Answer: A

30. Young's modulus is the ratio of:

- A) Longitudinal stress to longitudinal strain
- B) Shear stress to shear strain
- C) Volumetric

stress to volumetric strain D) Lateral strain to longitudinal strain

Answer: A

31. The unit of stress in SI system is:

A) kg B) Newton C) Pascal (N/m²) D) Joule

Answer: C

32. Hooke's law is valid up to:

A) Yield point B) Proportional limit C) Ultimate strength D) Breaking point

Answer: B

33. Bronze is primarily an alloy of:

A) Copper and zinc B) Copper and tin C) Iron and carbon D) Aluminum and copper

Answer: B

34. Which of the following is a property of cast iron?

A) High ductility B) Good machinability and vibration damping C) High tensile strength
D) Corrosion resistance

Answer: B

35. The basic unit of crystal structure in metals is:

A) Atom B) Molecule C) Unit cell D) Lattice

Answer: C

36. Which projection gives the most realistic 3D appearance but is not used for dimensioning?

A) Orthographic B) Isometric C) Oblique D) Perspective

Answer: D

37. In engineering drawing, hidden edges are shown by:

A) Continuous thick line B) Dashed medium line C) Chain line D) Zigzag line

Answer: B

38. Which of the following is used to draw irregular curves in engineering drawing?

A) Mini-drafter B) Set squares C) French curves D) Protractor

Answer: C

39. In orthographic projection, the object is placed between the observer and the projection plane
in:

A) First angle projection B) Third angle projection C) Second angle projection D) Fourth angle projection

Answer: A

40. The ratio of lateral strain to longitudinal strain is called:

A) Young's modulus B) Bulk modulus C) Poisson's ratio D) Modulus of rigidity

Answer: C

