

Winmeen Tnpsc Group 1 & 2 Study Materials

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Tnpsc Group 2 Previous Questions : <https://goo.gl/PYqsd7>

Tnpsc Group 2 Model Questions : <https://goo.gl/xQvyTk>

5. Measurement and Measuring Instrument

1. What was the writing of Claudius Ptolemy?

He wrote that the moon, the sun and all the planets around the Earth in an almost circular path.

2. Who was the first to point out that Mercury, Venus, Saturn, Jupiter and Mars moved in a path that seemed to be centered around the sun not the Earth?

Claudius Ptolemy

3. Who built his own telescope?

Galileo

4. Who discovered three moons of Jupiter?

Galileo

5. What is range of the instrument?

The values between the minimum measurable values and the maximum value that can be measured is called the range of the instruments.

6. What are the three important characteristics of measuring instruments?

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Least count, range, zero error

7. What is least count?

The smallest value that any instrument can measure is called as least count of the instrument.

8. What is observed value?

The value that is read off the instrument is called the observed value to which we apply the zero error correction and obtain the measured value.

9. Name the dimensions and SI unit?

Dimension	SI Unit
Length	Metre
Mass	Kilogram
Time	Second
Electric current	Ampere

10. Which is called as base unit?

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The metre, the gram, the second and the ampere are known as the base units, to which we can add some prefixes.

11. What is base unit of mass?

Gram

12. What is SI unit of mass?

Kilogram

13. What is vernier caliper?

It is a device that is used a great deal in engineering work and in workshops which manufacture things.

14. What is called as ingenious device?

Vernier caliper because it has two scales with fairly large least counts are used in conjunction with one another to measure very small values of length.

15. What are the tips for measuring?

1. Recorded values of measurements must always be accompanied by the appropriate

units.

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2. As far as possible, measurements must be tabulated.
3. Values must be recorded to the appropriate decimal place.
16. Who was Pierre Vernier?

Pierre Vernier (1580 - 1637) was a French government official. Vernier was taught Mathematics and science by his father who was a lawyer and engineer.

17. What is the formula for Vernier Caliper principle?

Object length = Main scale reading + (Vernier coincident*least count)

18. What do Vernier Caliper consists of ?

- A thin long steel bar graduated in cm and mm (4). This is the Main scale.
- Fixed perpendicular to the bar at the left end of the steel bar carrying the main scale is an upper fixed jaw and a lower fixed jaw.
- To the right of the fixed jaws mounted on the steel bar is a slider with a upper movable jaw and a lower movable jaw.
- The slider can be fixed to any position using the tightening screw or friction nut.
- The Vernier scale (6) is marked on the slider and moves along with the movable jaws and the slider.

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- The lower jaws (1) are used to measure the external dimensions and the upper jaws (2) are used to measure the internal dimensions of objects.
- The thin bar attached to the Vernier scale at the right side (3) is called the depth probe and is used to measure the depth of hollow objects.

19. What is beam balance?

A beam balance compares the sample mass with a standard reference mass (known masses such as 100g, 200g etc.). Least counts of 20g to 50 mg are possible.

20. What is Physical balance?

It is used in laboratories. It is similar to the beam balance but is a lot more sensitive and can measure mass of an object correct to a milligram.

21. What is two pan balance?

This type of balance is commonly used for measuring mass in shops. This balance too compares the sample mass with a standard reference mass. The pans rest on top of the beam and can be conveniently placed on a table top. Least counts are generally in the region of 10g to 50g.

22. What is Chandelier?

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The pendulum as a reliable measure of time was first articulated by Galileo in 1602. In those days many lamps would be mounted on a large glass arrangement suspended from the ceiling. Such an elaborate arrangement was called a “chandelier”.

23. What is pendulum?

A pendulum is a heavy bob suspended by a light thread. The length [L] of the pendulum is measured from the point of suspension or pivot to the centre of gravity of the bob.

24. What is oscillation?

When the pendulum

is displaced from the centre position and released, it begins to swing to and fro. One complete to and fro motion is called an oscillation.

25. What is sundial?

The sundial has a stick or object to cast a shadow on the horizontal surface. As

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the sun moves across the sky, the position of the shadow moves on the dial face to indicate time. The least count of such sundials again varied a great deal and improved from about one hour to about 15 minutes in the later years.

26. What is water clock?

It was an evenly marked container with a float and pointer into which water dripped in at a fixed rate. As the water dripped into the container, the level of water increased. The time was read off on the level markings on the wall of the container.

27. What is sand clock?

It was made up of two rounded glass bulbs connected by a narrow neck of glass, between them.

28. What is atomic clock?

Atomic clocks are the most accurate timekeepers ever known. The best ones lose or gain 1 second in 109 days (approximately 2739726 years).