

Chemistry



Model Exam (1)

1) Choose the correct answer:

- One of types of glass tools used in preparation and distillation
a. round flasks b. burette c. pipette d. balance
- Small volumes of liquids can be measured with
a. graduated cylinder **b. tubes**
c. graduated beaker d. flasks
- From the tools that measures pH value
a. paper tapes b. digital balance
c. p^H meter **d. (a) and (c)**
- In the burette, zero is close to the
a. upper opening b. middle
c. lower opening d. value
- From the one dimensional Nano scale
a. nano fibers b. nano tubes
c. nano shells d. bucky ball
- The nano meter = meter
a. 1×10^9 b. 1×10 c. 1×10^{-3} d. 1×10^{-9}
- The nano scale is important in our life because it
a. requires certain tools to see it and deal with
b. appears new properties
c. ranges from 1 : 100 n m
d. needs certain methods to be produced



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8. Which of the following value is larger?
a. 10^{-6} b. 10^{-9} c. 10^{-3} d. 10^{-2}
9. On dividing a cube into smaller cubes, the surface area.
a. decreases and the volume decreases
b. increases and the volume decreases
c. decreases and the volume remains fixed
d. increases and the volume remains fixed
10. Nano meter is used to measure
a. The diameter of an atom
b. The diameter of water molecule
c. The diameter of sand grain
d. All the previous

2) Give reason:

- Measurement has a great importance in chemistry
- Bec.it provide us with necessary information and quantitative data.
- Chemistry is considered the center of most other sciences.
- Bec.it integrates with other branches of science.
- Nano meter is an unusual measuring unit.
- Because extraordinary properties of the substance appear on this Scale.
- Bucky ball (C_{60}) is used as a medicine carrier.
- Bec.it is a Hollow ball with an outer part resists the reaction inside the body



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5. Nano tubes can be used to make space elevator.
- Bec. they are lighter and stronger than steel.

3) Choose from column (B)

What suits column (A):

A	B
1- Biochemistry	(4) studying the living organisms
2- Physical – chemistry	(3) studying matter its movement and energy
3- Physics	(1) Deals with the structure of cell parts.
4- Biology	(2) Deals with studying the properties and structure of matter
5- Chemistry	(5) studying the properties and reactions of substances

• The applications of nanotechnology

A	B
1- Agriculture	(6) water filters
2- Energy	(4) Filters for purifying air, water.
3- Industry	(1) preserving food / pesticides
4- Environment	(7) space shuttle
5- Communication	(2) solar cells
6- Nano fibers	(3) Nano wrapping substances
7- Nano tubes	(5) Decreasing the size of transistor



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4) Write the scientific term:

1. An organized structure of knowledge includes facts, concepts, principle and theories. (Science)
2. The chemical substance with healing properties. (medicines)
3. Deals with the treatment of matter on the nano scale.(nano technology)
4. Deals with the chemical applications of the nano substances. (nano chemistry)
5. Equals one of a billion of meter. (nano meter)
6. Substances in which one or more of their dimension is between (1 – 100nm) (nano substance)
7. The volume of the substance in which the nano properties appears. (critical volume)
8. The properties of the substance that depend on the nano volume of the substance. (volume dependent properties)
9. A place at which the chemical experiments are carried out. (chemistry laboratory)
10. The comparison of an known quantity with a known one. (measurement)

5) a- What is the importance of measurement in chemistry:

1. Gaining information.
2. Monitoring and protection.
3. Evaluation and suggestion.



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b- Mention one application of nanotechnology in the following fields:

1. **Medical:** Early diagnosing of diseases.
2. **Agricultural:** Production of pesticides.
3. **Energy:** Production of nano silicon and hydrogen fuel cells.
4. **Industrial:** Production of nano wrapping substance.
5. **Communication:** Production of wireless nano devices.
6. **Environmental:** Production of nano filter for purifying air and water.

c- Mention one harm of nano technology in the following fields:

1. **Medical:** nano particles have a negative effects on organs.
2. **Environmental:** Pollution of water and air by nano particles.
3. **Social:** un even distribution of resources.

