



## 10+1 (Non-Medical)

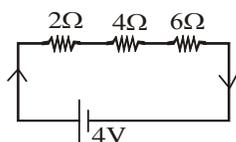
### Entrance Test (Sample Question Paper)

#### [Section - A (Physics)]

Time : 25 min.

Max. Marks - 15

1. State Ohm's law. [1]
2. Write S.I. unit of resistance. [1]
3. Write S.I. unit of power of lens. [1]
4. What is power? [1]
5. Define principal focus of concave mirror. [1]
6. How many electrons makes 10C of charge? [2]
7. Define reflection of light. State laws of reflection. [2]
8. How much work is done in moving a charge of 5C across two points having a potential difference of 10V? [2]
9. Find the total resistance in the following circuit :



10. Define magnification of a lens. What are the signs used for magnification in convex lens and concave lens? [2]

#### [Section - B (Chemistry)]

Time : 25 min.

Max. Marks - 15

1. How many valence electrons will Nitrogen have? [1]
2. Identify the compound with double bond:  
 $C_3H_8$ ,  $C_4H_{10}$ ,  $C_2H_2$  [1]
3. Balance the given equation :  
 $Mg + HCl \rightarrow MgCl_2 + H_2$  [1]
4. What is chemical formula of Washing soda? [1]
5. Define oxidation. [1]
6. Write IUPAC name of following compounds :
  - a)  $CH_3 - CH_2 - \underset{\substack{| \\ Cl}}{CH} - CH_3$
  - b)  $CH_3 - CH_2 - CH - CH_3$  [2]

7. Write down electronic configuration of :
- Aluminium (At. No = 13)
  - Calcium (At no = 20) [2]
8. Differentiate between reversible and irreversible reactions. [2]
9. What do you mean by catenation? Give one example. [2]
10. What is homologous series? Write first two members of Aldehyde series. [2]

[Section - C (Maths)]

Time : 30 min.

Max. Marks - 20

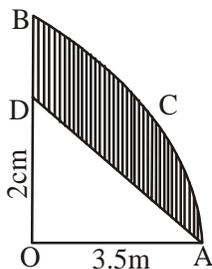
[Section - A]

- Determine the nature of roots of  $x^2 + x + 1 = 0$ .
- Which term of the A.P. 84, 80, 76, ----- is 0.
- Find the distance between the points (-6, 7) and (-1, -5).
- If PT is a tangent at T to a circle whose centre is O and OP = 17cm, OT=8cm. Find PT.

[4×2=8]

[Section - B]

5. Find the are of shaded part.



- Metallic sphere of radii 6cm, 8cm and 10cm respectively are melted to form a single solid sphere. Find the diameter of the resulting sphere.
- What is the probability that a number selected from the numbers 1, 2, 3, -----,15 is a multiple of 4? [3×4=12]

[Section - D (English)]

Time : 30 min.

Max. Marks - 20

1. Read the following passage below and answer the questions that follow:-

1. An escalating epidemic of overweight and obesity is affecting many countries in the world: more than 300 million people are overweight or obese. Obesity could be reason specific. In India, some people tend to be overweight because of their high calories diet and lack of physical activities. In the United States, obesity is more prevalent in lower economic groups. Obesity is now well recognized as a disease in its own right. Though obesity commonly means very overweight,

it is defined as an excess amount of body weight that includes muscles, bone, fat and water. 'Obesity' specifically refers to an excess amount of body fat. Some people, such as body builders or other athletes with a lot of muscle, can be overweight without being obese.

2. A certain amount of body fat is needed for stored energy, heat insulation, shock absorption and other functions. Generally, women have more body fat than men. Usually men with more than 25% body fat and women with more than 30% body fat are regarded as obese. Obesity tends to run in families, suggesting a genetic cause. Environmental factors mean lifestyle behaviours such as what a person eats and his or her level of physical activity. Although you cannot change your genetic make-up, you can change your eating habits and levels of activity. You can learn how to choose more nutritional meals which are low in fat, and become more active.

3. Then there are the psychological factors, Negative emotions such as boredom, sadness or anger, respond to people who overeat. There is also 'binge eating' when people eat large amounts of food thinking that they cannot control how much they are eating. Those with the most severe binge eating problems are also likely to have symptoms of depression and low self-esteem. These people may have more difficulty in losing weight and keeping it off than people without binge eating problems.

4. Obesity is more than a cosmetic problem; it is a health hazard. Several serious medical conditions have been linked to obesity, including type-2 diabetes, heart disease, high blood pressure and stroke. Obesity is also linked to higher rates of certain types of cancer. Other diseases and health problems linked to obesity include gall bladder disease and gallstones, liver disease, osteoarthritis which leads to deterioration of joints, gout which also affects the joints and reproductive problems in women.

5. As the trend is to equate attractiveness with slimness, especially for women, obesity makes people feel unattractive. There are many methods of treatment but the benefits of exercise are much more than any other way of losing weight. Not only does exercise help you to lose weight but it also improves your fitness and flexibility and improves skin texture. Exercises are also free from the harmful side effects of crash dieting, slimming capsules and the heat treatment used in slimming centres.

**Answer the following questions:-**

(i) Obesity is defined as \_\_\_\_\_ .

(ii) Men and women can be described as being obese when \_\_\_\_\_ .

(iii) One can become more active by \_\_\_\_\_ .

[3×1=3]

**2. Using the following key-words, form a passage and also provide a suitable title for it.**

- age — 40 years
- height/weight/appearance—6 ft/75 kg-fat, smart, good-looking
- education—M.A. (Mathematics) : Agra University, Agra  
—B.Ed: M.D. University Rohtak
- experience—15 years
- duties—teaching mathematics, class teacher, organises Mathematics Olympiad

- why I like/dislike him—painstaking, thorough, explains in detail, solves our problem-easily available-patient listener-cheerful-friendly approach [5]

**3. Write a paragraph in about 80-100 words on any one of the following :-**

- i) Computer Boon or Bane
- ii) Save Trees Save Life
- iii) Pollution

[5]

**4. Fill in the blanks with the correct options from those given below :-**

(a) I commenced work \_\_\_\_\_ 1st May.

- i) since
- ii) from
- iii) for

(b) The child has been missing \_\_\_\_\_ yesterday.

- i) since
- ii) from
- iii) for

(c) I saw him felling a big tree \_\_\_\_\_ a hatchet.

- i) by
- ii) with
- iii) off

[3×1=3]

**5. Look at the words and phrases given below. Rearrange them to form meaningful sentences.**

i) one of / friends / a / best / our / good / is / book

ii) most / companions / patient / of / it / cheerful / and / is / the / one

[2×1=2]

**6. Change the narration of the following sentences :-**

i) Rama said, "I am very busy now".

ii) I say, "I am an honest man".

[2×1=2]