ICSE Chemistry Model Paper 15

Answers to this Paper must be written on the paper provided separately.
You will not be allowed to write during the first 15 minutes.
This time is to be spent in reading the Question Paper.
The time given at the head of this paper is the time allowed for writing the answers.

Section I is compulsory. Attempt any four questions from Section II.
The intended marks for questions or parts of questions are given in brackets [].

SECTION I (40 Marks)
*Attempt **all** questions from this Section*

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-The time given at the head of this paper is the time allowed for writing the answer.

-This question paper is divided into two sections.
- Section I contains one question with eight parts (a) to (h): all eight parts to be answered. Section II contains six questions, numbered 2 to 7. You are to answer four of these questions.
-The intended marks for questions or parts of questions are given in [].
-All working, including rough work, should be done on the same sheet as the rest of the answers.

Q 1 (a) Name one element, in each case, to which the following descriptions could apply:
(i) the molten metal which gives white fumes when reacting with chlorine;
(ii) the burning metal which combines directly with nitrogen;
(iii) the metal which directly combines with sulphur on heating;
(iv) the non-metal which forms two compounds when reacting with chlorine.

Q 1 (b) Name the gas that you can obtain in the laboratory from each of the following and write the equation for the reaction taking place in each case:
(i) ammonium nitrite;
(ii) ammonium chloride;
(iii) ammonium nitrate.

Q 1(c) (i) Name the two crystalline allotropes of sulphur. For each allotrope give a sketch of the shape of its crystals.
(ii) Which sulphur allotrope is stable at room temperature ?

Q 1(d) (i) What is the mass of nitrogen in 1000 kg of Urea[CO(NH2)2] ?
(Answer correct to the nearest kg.)
(H=1;C=12;N=14;O=16)

(ii) Is it possible to change the temperature and pressure of a fixed mass of gas without changing its volume ? Explain your answer.

Q 1(e) (i) What should be the physical state of lead bromide if it is to conduct electricity?
(ii) What particles are present in pure lead bromide?
(iii) Write the equation for the reaction which take place at the electrodes during the electrolysis of lead bromide.

Q 1(f)Three test-tubes contain calcium nitrate solution , zinc nitrate solution and lead nitrate solution respectively. Each solution is divided into two portions (f) (i) and (f) (ii). Describe the effect of :
(i) adding sodium hydroxide solution to each portion in turn till it is in excess.
(ii) adding ammonium hydroxide to each portion in turn till it is in excess.

Q 1(g) State three tests by which you could identify a gas as being chlorine.

Q 1(h) Define or explain the meaning of the following terms :
(i) Molar volume;
(ii) Fixation of nitrogen;
(iii) Acid salt;
(iv) Vulcanisation;
(v) Ore

SECTION -II(40 marks)
Answer any four questions

Q 2(a) (i) What is the purpose of the pH scale?
(ii) What is the pH of pure water?
(iii) A is a soluble acidic oxide; B is a soluble base. Compared to the pH of pure water, what will be the pH of :
(1) a solution of A
(2) a solution of B?

Q 2(b) Taking sodium carbonate as an example, give the meaning of the following terms:
(i) Water of crystallization;
(ii) anhydrous;
(iii) efflorescence.

Q 2(c) (i) Barium chloride solution can be used to distinguish between a sodium sulphate solution and a sodium nitrate solution. How is this done?
(ii) Write the equation for the action of heat on sodium nitrate