**JAWAHAR NAVODAYA VIDYLAYA AMARKANTAK ANUPPUR M.P.**

**FA IV (FEBRUARY 2011-12)**

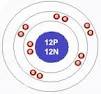
**SCIENCE AND TECHNOLOGY (THEORY)**

**M.M. 40 TIME 1 ½ HRS.**

**INSTRUCTION:**

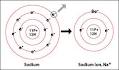
1. **Question Paper is divided into 3 parts, Part A Chemistry (18 Marks) Part B Physics () Part C Biology**
2. **All the questions are compulsory and to be performed Section wise**

**SECTION A (CHEMISTRY)**

1. [](http://www.google.co.in/imgres?imgurl=http://www.saburchill.com/chemistry/visual/atoms/images/Mg.jpg&imgrefurl=http://www.saburchill.com/chemistry/visual/atoms/012.html&usg=__xZw3Huvy1WA8GQCCF0G5qtwBMnM=&h=170&w=182&sz=8&hl=en&start=8&zoom=1&tbnid=995llEXF5pwwEM:&tbnh=94&tbnw=101&ei=3k0jT_LhHcvjrAfdpfCzCA&prev=/search%3Fq%3DMAGNESIUM%2BATOM%26hl%3Den%26gbv%3D2%26tbm%3Disch&itbs=1)

**Calculate Atomic number and Mass number of the given element.**

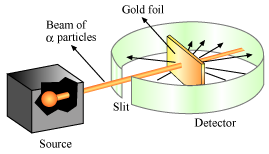
**Identify the element and write the symbol of the element (2 Marks)**

1. What are isotopes? Give two application of Isotopes. (2 Marks)
2. Compare the properties of electrons, protons and neutrons. (3 Marks)
3. [](http://www.google.co.in/imgres?imgurl=http://198.185.178.104/iss/electricity/pages/images/b/b11_5.jpg&imgrefurl=http://198.185.178.104/iss/electricity/pages/b11.xml&usg=__NSVeeoCHQjtdjVNX7S0gMpQZ6bs=&h=194&w=330&sz=18&hl=en&start=5&zoom=1&tbnid=hzA-4PA8zymHxM:&tbnh=70&tbnw=119&ei=f1AjT9ymMIXJrQfKjb2zCA&prev=/search%3Fq%3Dsodium%2Bion%26hl%3Den%26gbv%3D2%26tbm%3Disch&itbs=1)

**Na+ has completely filled K and L shells. Explain.**

**(2 Marks)**

1. A scientist performed a experiment to determine the structure and designed the following setup:



**Name the scientist. Explain the experiment and write the conclusion and draw the atomic model on the basis of his theory.**

**(5 Marks)**

1. Write the formulae of the following compound:
2. Sodium Phosphate ii. Magnesium Nitrate
3. Draw the atomic model of [](http://www.google.co.in/imgres?imgurl=http://images.suite101.com/946913_com_potassium.png&imgrefurl=http://www.suite101.com/view_image.cfm/946911&usg=__ScpntONB3KeG2VTZFEcGyNQTXN4=&h=600&w=424&sz=995&hl=en&start=4&zoom=1&tbnid=JW0dEoxvwZR0hM:&tbnh=135&tbnw=95&ei=fFIjT8GhK4yIrAfxo8yaCA&prev=/search%3Fq%3Dsymbol%2Bof%2Bpotassium%26hl%3Den%26gbv%3D2%26tbm%3Disch&itbs=1)