  The pioneers of the teaching of science imagined that its  
    introduction into education would remove the conventionality,  
    artificiality, and backward-lookingness which were characteristic;  
    of classical studies, but they were gravely disappointed. So, too, in  
5   their time had the humanists thought that the study of the classical  
    authors in the original would banish at once the dull pedantry and  
    superstition of mediaeval scholasticism. The professional  
    schoolmaster was a match for both of them, and has almost  
    managed to make the understanding of chemical reactions as dull  
10  and as dogmatic an affair as the reading of Virgil's Aeneid.

    The chief claim for the use of science in education is that it  
    teaches a child something about the actual universe in which he is  
    living, in making him acquainted with the results of scientific  
15  discovery, and at the same time teaches him how to think logically  
    and inductively by studying scientific method. A certain limited  
    success has been reached in the first of these aims, but practically  
    none at all in the second. Those privileged members of the  
    community who have been through a secondary or public school  
20  education may be expected to know something about the  
    elementary physics and chemistry of a hundred years ago, but they  
    probably know hardly more than any bright boy can pick up from  
    an interest in wireless or scientific hobbies out of school hours.  
    As to the learning of scientific method, the whole thing is palpably  
25  a farce. Actually, for the convenience of teachers and the  
    requirements of the examination system, it is necessary that the  
    pupils not only do not learn scientific method but learn precisely  
    the reverse, that is, to believe exactly what they are told and to  
    reproduce it when asked, whether it seems nonsense to them or  
30  not. The way in which educated people respond to such quackeries  
    as spiritualism or astrology, not to say more dangerous ones such  
    as racial theories or currency myths, shows that fifty years of  
    education in the method of science in Britain or Germany has  
    produced no visible effect whatever. The only way of learning the  
35  method of science is the long and bitter way of personal  
    experience, and, until the educational or social systems are altered  
    to make this possible, the best we can expect is the production of a  
    minority of people who are able to acquire some of the techniques  
    of science and a still smaller minority who are able to use and  
40  develop them.

Adapted from: The Social Function of Science, John D Bernal (1939)

**1.** The author implies that the 'professional schoolmaster' (line 7) has

A. no interest in teaching science   
B. thwarted attempts to enliven education   
C. aided true learning   
D. supported the humanists   
E. been a pioneer in both science and humanities.

**2.** The author’s attitude to secondary and public school education in the sciences is

A. ambivalent   
B. neutral   
C. supportive   
D. satirical   
E. contemptuous

**3.** The word ‘palpably’ (line 24) most nearly means

A. empirically   
B. obviously   
C. tentatively   
D. markedly   
E. ridiculously

**4.** The author blames all of the following for the failure to impart scientific method through the education system except

A. poor teaching   
B. examination methods   
C. lack of direct experience   
D. the social and education systems   
E. lack of interest on the part of students

**5.** If the author were to study current education in science to see how things have changed since he wrote the piece, he would probably be most interested in the answer to which of the following questions?

A. Do students know more about the world about them?   
B. Do students spend more time in laboratories?   
C. Can students apply their knowledge logically?   
D. Have textbooks improved?   
E. Do they respect their teachers?

**6.** Astrology (line 31) is mentioned as an example of

A. a science that needs to be better understood   
B. a belief which no educated people hold   
C. something unsupportable to those who have absorbed the methods of science   
D. the gravest danger to society   
E. an acknowledged failure of science

**7.** All of the following can be inferred from the text except

A. at the time of writing, not all children received a secondary school education   
B. the author finds chemical reactions interesting   
C. science teaching has imparted some knowledge of facts to some children   
D. the author believes that many teachers are authoritarian   
E. it is relatively easy to learn scientific method.