

NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY
FACULTY OF INDUSTRIAL TECHNOLOGY
DEPARTMENT OF TECHNICAL TEACHER EDUCATION
Programme: BACHELOR OF EDUCATION HONOURS DEGREE
MAI N EXAMI NATI ON

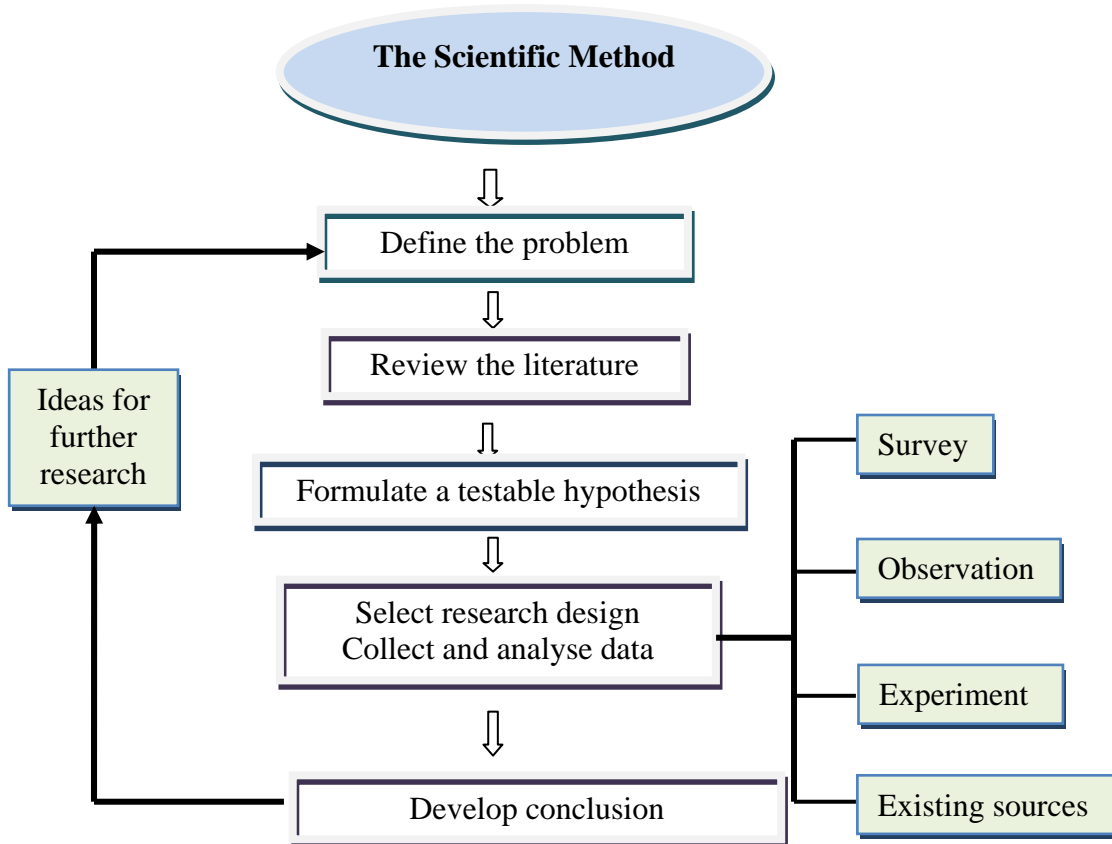
Course: *Science Technology and Society* **TTE1216**
Part: *I* **MAY 2013**
Time: *3 hours* **Lecturer: Dr N Phuthi** **100 marks**

DIRECTIONS AND INFORMATION FOR CANDIDATES

1. Answer **Question 1** and any **THREE** others.
2. All questions carry equal marks.
3. Questions may be written in any order but each question/sub-question must be clearly numbered and parts of one question must appear together.
4. Begin each question on a fresh page and parts of the same question must be together.
5. Show all working on the answer book, no part of the question paper should be handed in.
6. This paper consists of 3 printed pages.

QUESTION 1

The flow chart below shows the steps in the scientific method.



- (a) Provide definitions for: *the scientific method* and *hypothesis*. [5]
- (b) Outline how the method can be used to :
- (i) Improve the teaching of a topic which has proved to be difficult for your students to learn for a number of years in your teaching subject. [10]
 - (ii) Answer the question on whether higher education ensures a better income or not. [10]

QUESTION 2

Read the passage below and answer the questions after it.

A communication device often taken for granted is the human voice. Over half the billions of *neurons* in the *motor cortex* of your brain are involved in controlling your speech organs, and about 100 muscles operate the complex mechanisms of your tongue, lips, jaw, throat and chest. Your ear, too, is part of the same *communication system*. It converts sound into *electrical impulses* that your brain can process. Your brain analyses sounds, so you can recognise people by the *timbre* of their voice. Your brain also measures how many millionths of a second one ear hears before the other and thus calculates precisely where a sound comes from. These are just two of the features that enable you to listen to one person at a time, even though several others may be speaking. (*Awake Magazine, March 2010*)

- (a) Define the 5 terms written in *italics*. [5]
- (b) Make links between cellular telephone technology and the production and transmission of the human voice in a face-to-face conversation. [10]
- (c) The cellular phone (first invented in 1973) uses a combination of technology in the form of a battery (1800), a telephone (1876), a radio (1895) and a microprocessor (1971). Explain the roles of each product in the production of a cellular phone communication. [10]

QUESTION 3

The first of the eight United Nations (UN) Millennium Development Goals (MDGs) is: *To eradicate extreme poverty and hunger*.

- (a) State and explain any **three** other UN MDGs. [9]
- (b) Do you think Zimbabwe is on target to achieving the MDGs? Explain your answer. [6]
- (c) The table below shows information about poverty in the United States of America (USA). Explain, using figures, how the table shows racial inequality. [10]

Group	% of the USA population	% of the poor in the USA
Whites	83	44
Blacks	12	25
Hispanics	13	10

QUESTION 4

(a) Write a short essay to justify the saying that “the Industrial Revolution was characterised by the rise of the factory to the centre of social as well as economic life”.

[15]

(b) Explain how the following contributed to the beginning of the Industrial Revolution in England in 1750:

(i) A unique enthusiasm for science and engineering [5]

(ii) The rise of the New Men [5]

QUESTION 5

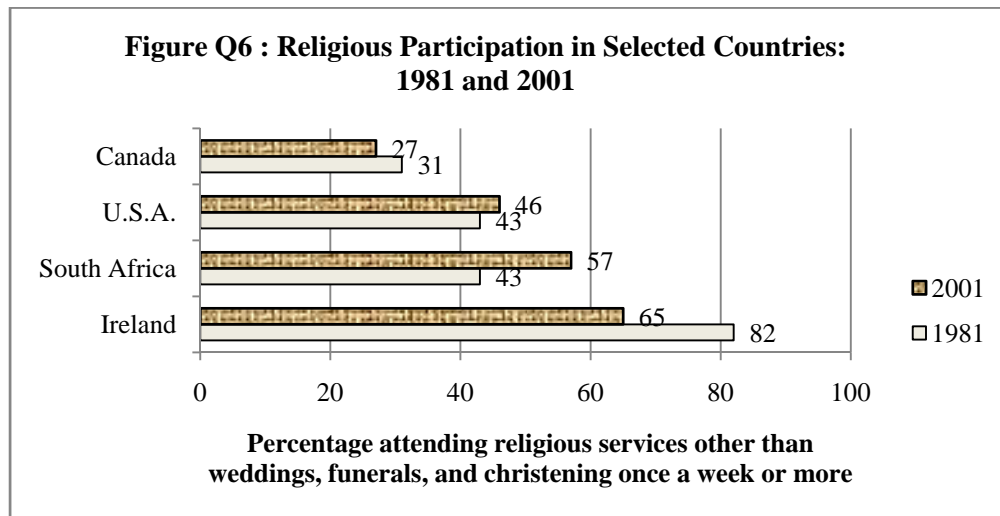
Critically examine the role of the peer group, mass media and technology on the socialisation of teenagers and youths in contemporary urban Zimbabwe society. [25]

QUESTION 6

It is argued that religion, whether it is Bhuddhism, Islam, Christianity or Judaism, provides “social glue”, and offers meaning and purpose to many people, giving them certain ultimate values and ends to hold in common.

(a) Explain the above statement with respect to the role of religion in social support, social change, and social control. [9]

(b) The diagram Figure Q6 below shows comparisons of religious participation in selected countries over a twenty-year period.



(i) Why, in your view, did religious participation decrease in Ireland and Canada but increase in South Africa? [6]

(ii) Compare and contrast religious participation in the USA and in South Africa, and offer an explanation. [10]

END OF EXAMINATION PAPER