

-SQA-SCOTTISH QUALIFICATIONS AUTHORITY

**Hanover House
24 Douglas Street
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NATIONAL CERTIFICATE MODULE DESCRIPTOR

-Module Number- 7310091 **-Session-1991-92**
-Superclass- RH

-Title- CAUSES AND PREVENTION OF DISEASE

-DESCRIPTION-

Purpose This module is designed to introduce students to the causes and prevention of disease.

The module would be suitable for inclusion in an introductory programme in human or general biology. The module could also be offered as a general interest topic in a variety of programmes.

It could be offered in conjunction with other Stage 1 Biology or Science modules.

Preferred Entry Level No formal entry requirements.

Outcomes The student should:

1. describe a range of diseases and the organisms that cause them;
2. describe the body's defence mechanisms;
3. apply the concept of infection control to minimise disease.

Assessment Procedures Acceptable performance in this module will be satisfactory achievement of all the Performance Criteria specified for each Outcome.

The following abbreviations are used below:

PC Performance Criteria
IA Instrument of Assessment

Note: The Outcomes and PCs are mandatory and cannot be altered. The IA may be altered by arrangement with SQA. (Where a range of performance is indicated, this should be regarded as an extension of the PCs and is therefore mandatory.)

OUTCOME 1 DESCRIBE A RANGE OF DISEASES AND THE ORGANISMS THAT CAUSE THEM

- PCs PC (a) The categorisation of the organism is correct with respect to its type.
 (b) The description of the disease is correct with respect to:
- (i) identity;
 - (ii) mode of entry;
 - (iii) symptoms of disease.

IA Assignment

An assignment to assess the student's ability to identify a range of diseases and the organisms that cause them.

The assignment will be carried out under closed book conditions and involve the categorisation for Performance Criterion (a) of five specimens from prepared slides, diagrams, photographs or photomicrographs. The specimens should include one of each from the following list:

- bacteria;
- viruses;
- fungi;
- protozoa;
- worms.

For Performance Criterion (b) the student will be required to describe ten Diseases allocated as follows:

- 2 caused by bacteria;
- 2 caused by viruses;
- 2 caused by fungi;
- 2 caused by protozoa;
- 2 caused by worms.

Satisfactory achievement of the Outcome will be demonstrated by the student achieving 5 correct responses for (a) and 10 correct responses for (b).

OUTCOME 2 DESCRIBE THE BODY'S DEFENCE MECHANISMS

- PCs
- (a) The description of the body's natural barriers to infection is correct.
 - (b) The description of the antigen antibody reactions is correct.
 - (c) The outline of the role of the reticuloendothelial system is correct in terms of site of production, neutrophils and phagocytosis.

IA Objective Questions

15 objective questions to assess the student's ability to describe the body's defence mechanisms.

The questions should be allocated as follows:

- PC (a) 5 questions
(b) 5 questions
(c) 5 questions

Several types of objective questions would be suitable for the above assessment.

Satisfactory achievement of the Outcome will be demonstrated by the student achieving 5 correct responses for each of the Performance Criteria.

OUTCOME 3 APPLY THE CONCEPT OF INFECTION CONTROL TO MINIMISE DISEASE

- PCs
- (a) The description of methods of infection control is correct with respect to:
 - (i) sanitisation;
 - (ii) water treatment;
 - (iii) sewage treatment.
 - (b) The description of immunisation and vaccination is correct in terms of:
 - (i) type of vaccine;
 - (ii) active immunity;
 - (iii) passive immunity.
 - (c) The description of the mode of action of chemotherapeutic agents is correct.

IA Structured Questions

3 structured questions to assess the student's ability to apply the concept of infection control to minimise disease.

The structured questions should be allocated one for each Performance Criteria.

Satisfactory achievement of the Outcome will be demonstrated by the student achieving all the Performance Criteria.

**The following sections of the descriptor are offered as guidance.
They are not mandatory.**

CONTENT/CONTEXT

Corresponding to Outcomes 1-3:

1. Diseases to include examples:
 - Bacterial: Salmonella, Streptococcus, Staphylococcus, Clostridium, Listeria, E. coli.
 - Viral: Rubella, Herpes, Hepatitis, HIV, Influenza, warts, (Verrucae).
 - Fungal: Tinea pedis, Candida albicans.
 - Protozoa: Sleeping sickness (Trypanosoma), malaria (Plasmodium), amoebic dysentery (Entamoeba).
 - Worms: roundworm, tapeworm, elephantiasis, liver fluke.

2.
 - (a) Body's natural barriers to include: skin, stomach acid, mucus membranes, pH, ciliated epithelium.
 - (b) Antigen antibody to include: antitoxins, opsonins, agglutinins, precipitins.

3.
 - (a) Sanitation in terms of disinfectants and antiseptics.
 - Water treatment: filters, chlorine.
 - Sewage treatment: filter, sedimentation, bacterial action.
 - (b) Types of vaccine: gamma globulins (Rubella), attenuated (BCG), toxoid (Tetanus).
 - (c) Chemotherapeutic agents: antibiotics, sulphonamides, antifungal, antiviral drugs.

SUGGESTED LEARNING AND TEACHING APPROACHES

During the work of the module students should have several opportunities to practise their skills. Each student should be assessed at appropriate points throughout the module. Where a student is unsuccessful in achieving an Outcome, provision should be made for remediation and reassessment.

A student-centred, resource-based approach is likely to be the most flexible for this module. The Outcomes can be integrated so that concepts can be developed.

Videos on the various aspects of the causes and prevention of disease would be appropriate teaching aids. Visits to water treatment or sewerage plants would also be appropriate.

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