

**-SQA-SCOTTISH QUALIFICATIONS AUTHORITY**

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**NATIONAL CERTIFICATE MODULE DESCRIPTOR**

**-Module Number- 0079130 -Session-1987-88**

**-Superclass- PE**

**-Title- PHARMACOLOGY 1**

**-DESCRIPTION-**

Type Purpose A specialist module which aims to provide a general understanding of types of drugs and their pharmacology.

Preferred Entry Level 69071 Human Physiology

Learning Outcomes The student should:

1. know the main routes of drug administration in and on the body and outline the effect of these routes on dosage and drug effect;
2. understand the distribution and fate of drugs in the body and outline the effect of these on dosage and drug effect;
3. understand the pharmacology of drugs affecting the central nervous system, the peripheral and autonomic nervous systems and metabolism;
4. understand and interpret drug literature.

Content/ Context Corresponding to Learning Outcomes 1 - 4:

1. Routes to include: oral, parenteral (intravenous, intramuscular, intradermal, intrathecal, subcutaneous), mucosal and topical.
2. Outline knowledge of absorption (selective and non-selective), distribution (general, differential), action (specific, non-specific), metabolism and elimination of drugs, and the relation of each to drug effect and dosage.

3. Central nervous system - the major types of general anaesthetic. A typical pre-operative anaesthetic regime (hypnotic, tranquilliser, antisecretory, analgesic and anaesthetic) with reasons for the use of each drug in terms of pharmacological effect.

The effects of, and diseases treated with, anti-depressants, hypnotics, sedatives and tranquillisers.

The major types of analgesic (mild, medium and narcotic) outlining situations in which each would be preferred to the others. The effects of each type of analgesic including anti-inflammatory, antipyretic and toxic effects where applicable.

The types and effect of drug treatment on two convulsant diseases (grand mal and petit mal, epilepsy).

Peripheral and autonomic nervous systems-the differing effects of local anaesthetics when administered by topical, infiltration, nerve block and spinal routes. The reason for the inclusion of adrenaline in some local anaesthetic injections.

The mode of action in simple terms of cholinergic, anticholinergic, anticholinesterase, adrenoceptor stimulant, adrenergic neurone blocking and adrenoceptor blocking drugs and their action on major body systems.

The mode of action of depolarising and non-depolarising neuromuscular blocking agents including additive and antagonistic effects. The reasons for administration during surgery and how the effect may be reversed.

Metabolism - the main pharmacological properties of corticosteroids (special reference to anti-inflammatory, electrolyte/water balance, immune response) relating clinical use to properties. The danger of adrenal suppression.

Three types of sex hormone (androgen, oestrogen and progesterone) their action and clinical use.

The factors influencing the choice of type of insulin or oral hypoglycaemic and the reasons for their use.

The reasons for the clinical use of thyroxine, thyroid suppressant drugs and of radioactive iodine.

4. Literature on drugs such as reference books, manufacturers' literature and textbooks.

Suggested Learning and Teaching Approaches

This is a theoretically based module which may require the student to spend additional time for extra study and memorisation.

Relating to Learning Outcomes 1-4:

Each of the main pharmacological areas, possibly as indicated by the content, could be treated as learning units. Each might be introduced by exposition and/or handout material and expanded by resource based learning methods appropriate to each Learning Outcome. This is likely to include working alone or in small groups. Resources used could include models, diagrams, photographs, passages of text, text books, reference books, scientific journals, manufacturers' literature, structured handouts and films. (This list is not exhaustive and each institution will require to adjust the teaching method to the resources available).

Remedial action should follow each assessment (see below) if necessary.

Assessment Procedures

Assessment should be made immediately after the completion of each section of the work. Each assessment should last about 30 minutes.

Acceptable performance in the module will be satisfactory achievement of the performance criteria specified for each Learning Outcome.

Where cutting scores are stated these are intended to be for guidance. The precise cutting score for a test will depend on the difficulty of the test and will have to be decided by the Tutor aided by the Assessor.

The following abbreviations are used below:

LO Learning Outcome  
IA Instrument of Assessment  
PC Performance Criteria

LO1 IA Test using an objective test and/or short answer test.

PC The performance to be achieved in each test will normally be 70% correct response or better.

LO2 IA Test using an objective test and/or short answer test.

- PC The performance to be achieved in each test will normally be 70% correct response or better.
- LO3 IA Use of four tests of objective and/or short answer items.
- PC The performance to be achieved in each test will normally be 70% correct response or better.
- LO4 IA An open book exercise to be held when the student feels confident to attempt it. The exercise may contain, for example, an interpretation passage or short answer questions which require reference to literature.
- PC The performance to be achieved will normally be 70% correct response or better.

Appendix to TUTOR'S NOTES Module 79130 The following is a detailed guide to the content of the module. To test all of this would be difficult and it would be unlikely that any student would get it all right. The assessment procedures should sample test the content. Students will be expected to achieve a high score in each test.

Learning Outcome 1:

description of the main routes of drug administration;

summary of the advantages and disadvantages of each of the main routes;

summary of the hazards associated with drug administration by each of the main routes.

Learning Outcome 2:

explanation of the distribution and fate of drugs in the body in terms of;

- (a) absorption (selective, non-selective),
- (b) distribution (general, differential),
- (c) action (specific, non-specific),
- (d) metabolism and elimination.

summary of the importance of bioavailability;

summary of the significance in medical treatments of;

- (a) tolerance,
- (b) idiosyncrasy,
- (c) dependence (physical and psychic).

Learning Outcome 3:

- (a) name of one example of each of the major types of general anaesthetic;

summary of the reasons for the use of each drug in a typical pre-operative anaesthetic regime;

differences between sedatives, anti-depressants, hypnotics and tranquillisers;

summary of the effects of each type of analgesic;

summary of the toxic effects associated with specific analgesics;

- (i) dependence,
- (ii) liver damage,
- (iii) gastric irritation;

summary of the effect of drug treatment on two convulsant diseases;

explanation of the differing effects of local anaesthetics when administered by different routes;

explanation of the reason for the inclusion of adrenaline in some local anaesthetic injections;

- (b) explanation of the mode of action of cholinergic, anticholinergic and anticholinesterase drugs;

summary of the action of cholinergic, anticholinergic and anticholinesterase drugs on major body systems;

- (c) explanation of the mode of action of adrenoceptor stimulant, adrenergic neurone blocking and adrenoceptor blocking drugs;

summary of the action of adrenoceptor stimulant, adrenergic neurone blocking and adrenoceptor blocking drugs on major body systems;

explanation of the mode of action of neuromuscular blocking drugs;

summary of the reasons for the use of neuromuscular blocking drugs in surgery;

- (d) summary of the main pharmacological properties of corticosteroids;

outline of the danger of adrenal suppression;  
summary of the clinical uses of sex hormones;

outline of the factors which influence the choice of insulin or oral hypoglycaemic;

outline of the reasons for the clinical use of thyroxine, thyroid suppressants and radioactive iodine.

Learning Outcome 4:

(Any two from the following will be sufficient to achieve the Learning Outcome)

interpretation of literature;

summary of literature;

drawing of conclusions from literature;

extraction of information from literature.

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