



General Certificate of Education

Advanced Level

Specimen Paper

Health and Social Care

**HSC10 Diagnosis, Treatment and
Preventative Strategies**

Unit 10

Mark Scheme

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the students' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of students' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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Mark Scheme – HSC10 Specimen Paper

Quality of written communication

The quality of written communication is assessed in all assessment units where students are required to produce extended written material. Students will be assessed according to their ability to:

- select and use a form and style of writing appropriate to purpose and complex subject matter
- organise relevant information clearly and coherently, using specialist vocabulary when appropriate
- ensure that text is legible, and that spelling, grammar and punctuation are accurate, so that meaning is clear.

- 1(a) Ref to the GP asking William questions in order to clarify the problem AW (1) discover William's medical history (1) help make a **provisional** AW diagnosis (1)
Max 2 (2 marks)
- 1(b) Ref to the GP using a sphygmomanometer – digital electronic (blood pressure) monitor (1) cuff placed around **upper** arm (1) pressure exerted as cuff inflates-tightens (1) stops pulse- restricts **arterial** blood flow AW (1) systolic reading – pressure of heart beat recorded (1) deflation-loosening of cuff (1) takes diastolic reading – pressure between beats (1) allow use of stethoscope to listen to blood flow (1) units mmHg (1)
Max 7 (7 marks)
- 1(c) ref to the GP placing ear pieces of tubing/stethoscope in his/her ears (1) placing metal disc AW on William's chest/back (1) will listen to William's breathing AW (1)
Max 2 (2 marks)
- 1(d) Ref to the stethoscope channelling sounds – via a metal dish/two tubes to ears (1) from William's lungs-heart (1) to identify abnormal noises AW (1) Allow ref to no amplification/eliminates background noise (1)
Max 3 (3 marks)
- 1(e) Ref to electrodes (1) attached to William's chest-wrist-ankles (1) recording electrical activity of the heart (1) which precedes each contraction (1) healthy heart produces a normal wave pattern (1) on a moving graph-monitor screen (1) abnormal wave pattern indicates dysfunction AW (1) ref to PQRST wave points (1) needs trained cardiologist to interpret wave patterns (1) William may be asked to exercise AW while readings taken (1)
Max 6 (6 marks)
- 2(a) Likely points may include:
- Number of women invited for screening is increasing as more reach the age range in an increasing population.
 - The number of 45- 50 and 70-74 year-old women invited is increasing as more areas open up screening to these age groups.
 - The total number of women actually screened following invitation has increased for all ages. Advertising campaigns and media coverage of cancer have impacted on these women.
 - The figures include women over 45 as well as over 50. Traditionally women were only invited once they reached the age of 50.
 - Women over 70 are now screened as the extension to this age group is phased in across the UK.
 - The acceptance rate remains static – this is because women can only be invited to be screened and it is not compulsory.
 - Many women do not take up the offer due to their embarrassment of the procedure, not seeing it as a necessity or an important part of their lives

- There has been a big increase in the number in the 45-74 women screened following self/GP referral – this could be because more women self-examine due to increased knowledge and advertising campaigns.
- The number of cancers detected has decreased – this could mean lifestyle choices are impacting on the numbers of breast cancer.
- Numerical manipulation points, e.g. 92,587 women aged 45-50 and 70-74 screened in 2009/10. Previously these women would not have been screened.

Mark Ranges

- 0 marks No response worthy of credit – simply restates the data
- 1-3 marks Answers cover 1-3 points. There is little if any numerical manipulation of data and possibly errors in interpretation in the responses.
Students who deploy appropriate knowledge and understanding and display higher QWC skills should be rewarded at the top end of this mark band.
Conversely, those who display some confusion and weakness in QWC supporting knowledge and understanding should be placed at the bottom end of this mark band.
- 4-6 marks More detailed answers making more than 4 points. Answers will be organised and show a good understanding of the screening issues.
Students who deploy appropriate knowledge and understanding and display higher QWC skills should be rewarded at the top end of this mark band.
Conversely, those who display some confusion and weakness in QWC supporting knowledge and understanding should be placed at the bottom end of this mark band.
- 7-9 marks Detailed answers covering 7 or more points. All points are supported by reasons for the findings. Work shows a high level of knowledge and understanding.
Students who deploy appropriate knowledge and understanding and display higher QWC skills should be rewarded at the top end of this mark band.
Conversely, those who display some confusion and weakness in QWC supporting knowledge and understanding should be placed at the bottom end of this mark band.

(9 marks)

- 2(b) Performed by a radiology technician (1) woman will undress to the waist (1) one breast at a time is placed upon the platform on the mammogram unit (1) the breast will be steadily compressed (1) an x ray beam will pass through the breast (1) the images taken are recorded (1) this process will be repeated 3 more times. 4 images are taken (1) The compression AW will even out the breast thickness (1) identifies small areas of calcium which may indicate changes to the breast tissue (1).
Max 5 (5 marks)

- 2(c) 1 mark for each of the **two** tests named from the list below, plus two marks for the description of each test.

Test - Blood pressure for hypertension (1)

Description - using a sphygmomanometer – digital electronic (blood pressure) monitor (1) cuff placed around **upper** arm (1) pressure exerted as cuff inflates-tightens (1) stops pulse- restricts **arterial** blood flow AW (1) systolic reading – pressure of heart beat recorded (1) deflation-loosening of cuff (1) takes diastolic reading – pressure between beats. (1)
Max 3

Test - Eye tests (1)

Description - must include tonometry and normal eye test. Using a non-contact tonometer, the optical assistant (or the optometrist) blows a few puffs of air at each of the eyes in turn. (1) The air bounces back at the instrument, giving a measurement of the pressure inside each eye. (1) Clients read the Snellen chart (1) through different strength lenses. (1) The results for one eye often vary from those for the other, so each eye will be tested individually before both eyes are finally tested together. May indicate short- or long-sight (1).

Max 3

Test - Smear test (1)

Description - The client will be asked to undress from the waist down and lie on a couch. (1) The doctor or nurse will gently put an instrument, called a speculum, into the vagina. (1) This holds the walls of the vagina open so that the cervix can be seen. (1) A small brush-like instrument will be used gently to collect some cells from the surface of the cervix. (1)

Max 3

Test - Physical examination for testicular cancer (1)

Description - Self examination by the client at home finds a lump (1) The GP may hold a small light or torch against the lump in the testicle to see whether light passes through it. (1) Cancerous lumps tend to be solid, which means that light is unable to pass through them. (1)

Max 3

(6 marks)

- 3(a) 1 mark for each cause, plus 2 marks for giving two modes of transmission for each.

Cause of Diphtheria - *Corynebacterium diphtheriae* (1)

Mode of transmission - The bacteria spread when an infected person coughs or sneezes, (1) and droplets of their saliva enter another person's mouth or nose. (1)

Max 3

Cause of tetanus - *Clostridium tetani* bacterium. (1) Mode of transmission – the spores can enter the body if a client breaks the skin (1) the tetanus bacteria quickly multiply and cause tetanus. (1)

Max 3

(6 marks)

- 3(b) Any **four** of the following symptoms of diphtheria: high temperature/fever of 38°C/100.4°F or above (1) chills (1) fatigue/extreme tiredness (1) sore throat (1) hoarse voice (1) cough (1) headache (1) difficulty swallowing or pain when swallowing (1) difficulty breathing (1) foul-smelling, bloodstained nasal discharge (1) swollen glands (nodes) in the neck. (1)

Max 4

(4 marks)

- 3(c) Temporary soreness and/or redness at injection site (1) hardening of the skin at the injection site (1) painless lump at the injection site (1) mild fever (1) headache (1)

Max 4

(4 marks)

- 3(d) Immunisation works by

- vaccines stimulating the immune system to produce antibodies (substances produced by the body to fight disease) without individuals actually becoming infected with the disease (1)
- vaccines triggering the immune system to produce its own antibodies against disease, as though the body has been infected with it; this is called 'active immunity' (1)

- if the vaccinated person then comes into contact with the disease itself, their immune system will recognise it (may mention memory cells) and immediately produce the antibodies needed to fight it (1)
- newborn babies are already protected against several diseases, such as measles, mumps and rubella, because antibodies have passed into them from their mothers via the placenta; this is called 'passive immunity' (1)
- passive immunity only lasts for a few weeks or months; in the case of measles, mumps and rubella, it may last up to one year (which is why the MMR jab is given to children just after their first birthday)(1)
- if enough people in a community are vaccinated, it's harder for a disease to pass between those who are not; this is called herd immunity (1)
- when a vaccination programme is introduced, everyone in the population of a certain age or risk group is offered a specific vaccine to try to reduce disease.(1)

Max 6

(6 marks)

- 4(a) 1 mark for each of the **three** methods named from the list below, plus 2 marks for the evaluation of each method.

Method - Oral or by mouth (1)**Evaluation**

Easy to use (1) allows for slow continuous release (1) self-administration (1) does not give immediate relief (1) some drugs are destroyed by the digestive system (1)

Max 3

Method - Sprays and inhalers (1)**Evaluation**

Fats delivery to the respiratory system (1) self-administration (1) only benefits/can be used on respiratory system (1)

Max 3

Method - Suppositories (1)**Evaluation**

Gradual absorption into blood stream (1) a method that can be used for drugs which are destroyed by digestive system and therefore can't be taken orally (1) can be uncomfortable/ embarrassing (1)

Max 3

Method - Injection (IM/IV/SUB) (1)**Evaluation**

Fast delivery (1) can be used if drugs are destroyed by the digestive system and can't be taken orally (1) some discomfort caused by needle (1) cannot be self-administered (1)

Max 3

Method - Creams or topical (1)**Evaluation**

Localised treatment (topical) (1) can be self-administered (1) slow action (1) limited to tissue at/or just below surface of the skin (1)

Max 3

(9 marks)

- 4(b) Drugs are named by brand (1) generic name/family – drug (1) chemical name/chemical composition (1)

(3 marks)

- 4(c) Lifestyle choices may include smoking/drinking alcohol/not exercising/overeating/ taking illegal drugs.
Relevant discussion points may include: wasted resources/ others may gain more benefit/ limited available resources/individual rights to treatment/individuals may have an addiction/addictions would need treatments/other factors may be important, e.g. age or other medical conditions. Answers could outline specific issues related to the named lifestyle choices e.g. lung/heart disease with smoking/ liver disease with those addicted to alcohol etc.

Mark ranges

1-3 marks Only one lifestyle choice mentioned. Generally simplistic accounts, tending to be one-sided, stating a view rather than a discussion. If only a one-sided argument, restrict to one mark.

Students who deploy appropriate knowledge and understanding and display higher QWC skills should be rewarded at the top end of this mark band. Conversely, those who display some confusion and weakness in QWC supporting knowledge and understanding should be placed at the bottom end of this mark band.

4-6 marks Two lifestyle choices mentioned. Some valid points made both 'for' and 'against' treatment, but lacking in some detail and/or coherence. Points reasoned, rather than just stated. For 6 marks must have at least 4 relevant points.

Students who deploy appropriate knowledge and understanding and display higher QWC skills should be rewarded at the top end of this mark band. Conversely, those who display some confusion and weakness in QWC supporting knowledge and understanding should be placed at the bottom end of this mark band.

7-8 marks Two lifestyle choices discussed. Reasoned points made in detail covering most of the range. For 8 marks must make at least 6 or more relevant points correctly.

Students who deploy appropriate knowledge and understanding and display higher QWC skills should be rewarded at the top end of this mark band. Conversely, those who display some confusion and weakness in QWC supporting knowledge and understanding should be placed at the bottom end of this mark band.

(8 marks)

HSC10 ASSESSMENT OBJECTIVE GRID

Question	AO1	AO2	AO3	AO4	Totals
1 (a)		2			2
1 (b)			7		7
1 (c)		2			2
1 (d)		3			3
1 (e)		4	2		6
2 (a)			7	2	9
2 (b)		3	2		5
2 (c)	2	4			6
3 (a)	6				6
3 (b)	4				4
3 (c)	2		2		4
3 (d)				6	6
4 (a)	3			6	9
4 (b)	3				3
4 (c)	2			6	8
Totals	22	18	20	20	80
Percentage	27.5%	22.5%	25%	25%	100%