NCFE CACHE Technical Level 3 Extended Diploma in Health and Social Care (601/8435/8)

May 2022

Unit title: DM3.1 Anatomy and physiology for health and social care

Assessment code: HSC/SAE
Paper number: P001381

Mark Scheme

v1.0 Pre-standardisation

This mark scheme has been written by the Assessment Writer and refined, alongside the relevant questions, by a panel of subject experts through the external assessment writing process and at standardisation meetings.

The purpose of this mark scheme is to give you:

- examples and criteria of the types of response expected from a learner
- information on how individual marks are to be awarded
- the allocated assessment objective(s) and total mark for each question.

Marking guidelines

General guidelines

You must apply the following marking guidelines to all marking undertaken throughout the marking period. This is to ensure fairness to all learners, who must receive the same treatment. You must mark the first learner in exactly the same way as you mark the last.

- The mark scheme must be referred to throughout the marking period and applied consistently. Do not change your approach to marking once you have been standardised.
- Reward learners positively giving credit for what they have shown, rather than what they might have omitted.
- Utilise the whole mark range and always award full marks when the response merits them.
- Be prepared to award zero marks if the learner's response has no creditworthy material.
- Do not credit irrelevant material that does not answer the question, no matter how impressive the response might be.
- The marks awarded for each response should be clearly and legibly recorded in the grid on the front of the question paper.
- If you are in any doubt about the application of the mark scheme, you must consult with your Team Leader or the Chief Examiner.

Guidelines for using extended response marking grids

Extended response marking grids have been designed to award a learner's response holistically and should follow a best-fit approach. The grids are broken down into levels, with each level having an associated descriptor indicating the performance at that level. You should determine the level before determining the mark.

When determining a level, you should use a bottom up approach. If the response meets all the descriptors in the lowest level, you should move to the next one, and so on, until the response matches the level descriptor. Remember to look at the overall quality of the response and reward learners positively, rather than focussing on small omissions. If the response covers aspects at different levels, you should use a best-fit approach at this stage, and use the available marks within the level to credit the response appropriately.

When determining a mark, your decision should be based on the quality of the response in relation to the descriptors. You must also consider the relative weightings of the assessment objectives, so as not to over/under credit a response. Standardisation materials, marked by the Chief Examiner, will help you with determining a mark. You will be able to use exemplar learner responses to compare to live responses, to decide if it is the same, better or worse.

You are reminded that the indicative content provided under the marking grid is there as a guide, and therefore you must credit any other suitable responses a learner may produce. It is not a requirement either, that learners must cover all of the indicative content to be awarded full marks.

Assessment objectives

This unit requires learners to:

AO1	Recall of knowledge and understanding
AO2	Application of knowledge and understanding
AO3	Analysis to demonstrate knowledge of concepts and theories

<table>
<tr><th>Qu</th><th>Mark scheme</th><th>Total marks</th></tr>
<tr><td>1 (a)</td><td>An individual agrees to receive treatment in the full knowledge of any consequences.

What type of consent is this?

Award one (1) mark for:

• informed consent (1).</td><td>1

AO1=1</td></tr>
<tr><td>1 (b)</td><td>Body temperature can be measured on an individual’s forehead and rectally.

Explain two (2) other methods of measuring an individual’s body temperature.

<table>
<tr><th>Level</th><th>Marks</th><th>Description</th></tr>
<tr><td>3</td><td>5–6</td><td>Application of knowledge is appropriate and accurate and shows clear understanding of methods of measuring an individual’s body temperature.

Explanation to demonstrate understanding of methods of measuring an individual’s body temperature is detailed and highly effective, with clearly reasoned consequences. Clear links are made.</td></tr>
<tr><td>2</td><td>3–4</td><td>Application of knowledge is mostly appropriate, showing some clear understanding of methods of measuring an individual’s body temperature. There may be a few errors.

Explanation to demonstrate understanding of methods of measuring an individual’s body temperature is effective and mostly relevant, with simplistic consequences. Some clear links are made.</td></tr>
<tr><td>1</td><td>1–2</td><td>Application of knowledge is limited and may show a lack of understanding of methods of measuring an individual’s body temperature. There may be a number of errors.

Explanation to demonstrate understanding of methods of measuring an individual’s body temperature lacks detail and may have limited effectiveness and relevance. Links may be made but are often inappropriate.</td></tr>
<tr><td></td><td>0</td><td>No creditworthy material.</td></tr>
</table>
</td><td>6

AO2=3

AO3=3</td></tr>
</table>

	Indicative content <u>Oral (mouth)</u> **AO2** • Clean thermometer. Place an oral digital thermometer in the individual's mouth, under their tongue. • Ask the individual to close their mouth. **AO3** • Wait for one minute. • Remove and read the thermometer. <u>Aural (ear)</u> **AO2** • Gently tug the ear pulling it back. • Place tympanic thermometer in ear. • Squeeze and hold the button for one second. **AO3** • Remove and read the thermometer. • Use a clean probe each time. <u>Axilla (underarm)</u> **AO2** • Place the tip of the thermometer in the centre of the armpit. • Tuck the arm snugly to the chest. • Leave the thermometer in place for one minute. **AO3** • Remove and read the thermometer. • Clean the thermometer. **NB** Learners who only provide one method cannot achieve higher than level 2. Accept other suitable responses.	

1 (c)	**Explain how levels of activity can affect body temperature.** Award up to **four (4)** marks for a correct explanation: • increased levels of activity lead to energy production when muscles contract (1) some of this energy is used in the contraction (1) the majority is given off as heat (1) • increase in cardiovascular activity also produces excess heat (1) • decreased levels of activity may result in lack of heat production (1) if the external temperature is low, this could reduce the core body temperature (1). This may result in hypothermia (1). Accept other suitable responses.	**4** **AO2=4**

1 (d)

Thermoregulation and glucoregulation are homeostatic mechanisms.

Explain the process of homeostasis.

6

AO2=3

AO3=3

Level	Marks	Description
3	**5–6**	Application of knowledge is appropriate and accurate and shows clear understanding of the process of homeostasis. Explanation to demonstrate understanding of the process of homeostasis is detailed and highly effective, with clearly reasoned consequences. Clear links are made.
2	**3–4**	Application of knowledge is mostly appropriate, showing some clear understanding of the process of homeostasis. There may be a few errors. Explanation to demonstrate understanding of the process of homeostasis is effective and mostly relevant, with simplistic consequences. Some clear links are made.
1	**1–2**	Application of knowledge is limited and may show a lack of understanding of the process of homeostasis. There may be a number of errors. Explanation to demonstrate understanding of the process of homeostasis lacks detail and may have limited effectiveness and relevance. Links may be made but are often inappropriate.
	0	No creditworthy material.

Indicative content

AO2

- Homeostasis – the tendency towards a stable equilibrium between internal and external environments.
- Internal and external environment – Homeostasis maintains steady internal physical and chemical conditions.
- These are the optimal functioning conditions for that organism, despite any changes that may occur to the external environment.

AO3

	• Autonomic process – the process consists of a stimulus being detected by a receptor. This input travels to a control centre (often the hypothalamus) which then sends an output (often via the pituitary gland) to the effectors which causes a response. • Negative feedback – almost all homeostatic mechanisms involve negative feedback. These mechanisms change a variable back to its original state or ideal value. This could be core body temperature, fluid balance, blood glucose or blood pressure. • Positive feedback –the output enhances the original stimulus. An example of this could be the production of oxytocin during childbirth. Accept other suitable responses.	

1 (e)	**Identify the primary hormone in osmoregulation** and **briefly describe its function.** Award **one (1)** mark for identification and up to **two (2)** marks for a description. • Antidiuretic hormone (ADH) (1) – tells kidneys how much water to conserve (1). An increase in ADH instructs the kidneys to return water to the blood stream (1). A reduction tells the kidneys to excrete water (1).	**3** **AO1=1** **AO2=2**

2 (a)	**Identify the** two (2) **valves that separate the atria and ventricles** and **describe** one (1) **of these valves.** Award up to **two (2)** marks for correct identifications and up to **two (2)** marks for an accurate description: • tricuspid valve (1) – on the right side of the heart (1) prevents backflow of blood (1) from the right ventricle into the right atrium (1) • bicuspid valve (1) – on the left side of the heart (1) prevents backflow (1) from the left ventricle into the left atrium (1).	**4** **AO1=2** **AO2=2**

2 (b)	**Measuring blood pressure gives two readings. One of these readings is diastolic blood pressure.** **Name the** other **reading of blood pressure** and **explain the meaning of this reading.**	**4** **AO1=1** **AO3=3**

	Award **one (1)** mark for correct identification: • systolic (1). Award up to **three (3)** marks for an accurate explanation: • during heart contraction blood is forced into the arteries under pressure (1) • refers to the amount of pressure in the arteries (1) • in a blood pressure reading, the systolic pressure is the first number recorded (1) • a normal systolic blood pressure is between 90 and 120 (1) • a reading of higher than 120 may mean you have high blood pressure (1).	

2 (c)	**Analyse how the structure of the respiratory system assists with inhalation and exhalation.** **Level** / **Marks** / **Description** **3** / **9–12** / A wide range of relevant knowledge and understanding of how the structure of the respiratory system assists inhalation and exhalation is shown, which is accurate and detailed. Application of knowledge is appropriate and accurate and shows clear understanding of how the structure of the respiratory system assists inhalation and exhalation. Analysis to demonstrate understanding of how the structure of the respiratory system assists inhalation and exhalation is detailed and highly effective, with reasoned judgements related to how the structure of the respiratory system assists inhalation and respiration made. Clear links are made. **2** / **5–8** / A wide range of relevant knowledge and understanding of how the structure of the respiratory system assists inhalation and exhalation is shown, which is mostly accurate and detailed. Application of knowledge is mostly appropriate, showing some clear understanding of how the	**12** **AO1=2** **AO2=5** **AO3=5**

		structure of the respiratory system assists inhalation and exhalation. There may be a few errors. Analysis to demonstrate understanding of how the structure of the respiratory system assists inhalation and respiration is effective and mostly relevant, with simplistic judgements related to how the structure of the respiratory system assists inhalation and exhalation made. Some clear links are made.
1	**1–4**	A limited range of relevant knowledge and understanding of how the structure of the respiratory system assists inhalation and exhalation is shown, which is often fragmented. Application of knowledge is limited and may show a lack of understanding of how the structure of the respiratory system assists inhalation and exhalation. There may be a number of errors. Analysis to demonstrate understanding of how the structure of the respiratory system assists inhalation and respiration lacks detail and may have limited effectiveness and relevance to how the structure of the respiratory system assists inhalation and exhalation. Links may be made but are often inappropriate.
	0	No creditworthy material.

Indicative Content

AO1

- Inhalation – the process of breathing in (inhaling).
- Exhalation – the process of breathing out (exhaling).

AO2

- Diaphragm –the primary muscle in respiration.
- It is a dome-shaped skeletal muscle located just below the lungs.
- It contracts and flattens on inhalation and relaxes on exhalation.
- Intercostal muscles – situated between the ribs.
- The external intercostal muscles raise the ribs to expand the chest cavity to allow inhalation.
- The internal intercostal muscles decrease space in the chest cavity to allow for exhalation.

AO3

- Trachea, bronchi – cartilaginous tubes that allow passage of air to and from the lungs.

	• No gaseous exchange occurs in these tubes. The contraction of the diaphragm and the raising of the ribs creates a vacuum allowing air to pass through these tubes into the lungs. • Flattening of the diaphragm causes air to pass back out of the lungs. The cartilage rings keep these tubes open to assist the passage of air. • Bronchioles – smaller branches of the bronchial airway that no longer contain cartilage. They deliver air to and from the alveoli. • Alveoli – small air sacs that allow for gaseous exchange. Oxygen is exchanged for carbon dioxide and is the primary purpose of inhalation and exhalation. Accept other suitable responses.	

3 (a)	**Identify the general term for the small components that make up a cell,** and **describe these components.** Award **one (1)** mark for correct identification and up to **two (2)** marks for an accurate description. • Organelles (1) – a specialised subunit of a cell (1). Each organelle has a specific function (1). Some organelles exist outside cell structures (1).	**3** **AO1=1** **AO3=2**

3 (b)	**Monitoring and assisting diagnosis are two reasons for the accurate and timely recording of physiological measurements.** **Identify** two (2) other **reasons for the accurate and timely recording of physiological measurements** and **explain** one (1) **of these reasons.** Award **one (1)** mark for each correct identification, up to **two (2)** marks and up to a further **two (2)** marks for an accurate explanation. • Care plans (1) – plan the care for an individual (1) individualised to the person being cared for (1). Ensure consistency of care (1). • Policies and procedures (1) – inform staff of what they should and shouldn't do (1). Inform staff of how to operate effectively (1). Following them is a requirement of a job description (1). • Safeguarding (1) – practitioners have a responsibility to safeguard individuals (1). Not recording accurately could cause harm to an individual (1). Not recording measurements in time could cause harm to individuals (1).	**4** **AO1=2** **AO2=2**

	• Changes in health (1) – an individual's health could deteriorate which may affect physiological measurements (1). Inaccurate recording of these measurements may prevent detection of changes (1). Not measuring in a timely manner could miss these changes (1). Accept other suitable responses.	

3 (c)	**Explain how medication may affect physiological measurements.** **Level 3 – 7–9** A wide range of relevant knowledge and understanding of how medication may affect physiological measurements is shown, which is accurate and detailed. Application of knowledge is appropriate and accurate and shows clear understanding of how medication may affect physiological measurements. Analysis to demonstrate understanding of how medication may affect physiological measurements is detailed and highly effective, with reasoned judgements related to the physiological measurements made. Clear links are made. **Level 2 – 4–6** A wide range of relevant knowledge and understanding of how medication may affect physiological measurements is shown, but may be lacking in sufficient detail, with a few errors. Application of knowledge is mostly appropriate, showing some clear understanding of how medication may affect physiological measurements. There may be a few errors. Analysis to demonstrate understanding of how medication may affect physiological measurements is effective and mostly relevant, with simplistic judgements related to physiological measurements made. Some clear links are made. **Level 1 – 1–3** A limited range of relevant knowledge and understanding of how medication may affect physiological measurements is shown, which is often fragmented.	**9** **AO1=1** **AO2=4** **AO3=4**

		Application of knowledge is limited and may show a lack of understanding of how medication may affect physiological measurements. There may be a number of errors. Analysis to demonstrate understanding of how medication may affect physiological measurements lacks detail and may have limited effectiveness and relevance to physiological measurements. Links may be made but are often inappropriate.
	0	No creditworthy material.

Indicative content

AO1

- Medication is defined as a drug used to diagnose, cure, treat or prevent disease.

<u>Statins</u>

AO2

- A group of drugs used to lower cholesterol.

AO3

- They may also reduce an individual's blood pressure.

<u>Beta-blockers</u>

AO2

- Work mainly by slowing down the heart/pulse rate.
- This can cause a lowering of an individual's blood pressure and a slowing down of the pulse.

AO3

- They can also affect body temperature regulation resulting in increase.

<u>Paracetamol</u>

AO2

- Can reduce an individual's body temperature.

AO3

- Paracetamol can also lower blood pressure and increase pulse rate.

<u>Inhalers</u>

AO2

- Some inhalers can cause tachycardia (increased heart rate/pulse).

<u>Prednisolone</u>

AO2

- This is a steroid.

	• This may reduce the heart rate, raise blood pressure, and reduce blood glucose levels. **AO3** • It may also cause weight gain which would increase BMI. Accept other suitable responses.	

3 (d)	**Explain the process of mechanical digestion.** Award up to **four (4)** marks for explaining the process **AO2** • Chewing by the mouth (1). • Churning by the stomach (1). • Peristalsis by the intestines (1). **AO3** • Food is initially broken down in the mouth (1) by the grinding action of teeth (1) Passing down the throat as a bolus (1). • The stomach lining contains muscles which squeeze the bolus over several hours (1) turning it into chyme (1). • The food is moved through the intestines (1) this promotes further mixing of the food with enzymes (1). Accept other suitable responses.	**4** **AO2=2** **AO3=2**

4 (a)	**Which structure in the female reproductive system produces egg cells?** **Describe** one (1) other **function of this structure.** Award **one (1)** mark for correct identification: • Ovary/ies (1). Award up to **two (2)** marks for an accurate description: • Produces hormones (1) oestrogen (1) and progesterone (1).	**3** **AO1=1** **AO2=2**

4 (b)	**Explain the process of semen production.** **Level** | **Marks** | **Description**	

3	**5–6**	Application of knowledge is appropriate and accurate and shows clear understanding of the process of semen production. Analysis to demonstrate understanding of the process of semen production is detailed and highly effective, with clearly reasoned consequences. Clear links are made.
2	**3–4**	Application of knowledge is mostly appropriate, showing some clear understanding of the process of semen production. There may be a few errors. Analysis to demonstrate understanding of the process of semen production is effective and mostly relevant, with simplistic consequences. Some clear links are made.
1	**1–2**	Application of knowledge is limited and may show a lack of understanding of the process of semen production. There may be a number of errors. Analysis to demonstrate understanding of the process of semen production lacks detail and may have limited effectiveness and relevance. Links may be made but are often inappropriate.
	0	No creditworthy material.

Indicative content

AO2

- sperm – testes will produce millions of sperm cells a day
- testes –contain a system of tiny tubes (seminiferous tubules) that house the germ cells that become sperm cells
- vas deferens – this is the sperm duct that mature sperm cells travel along in the process of ejaculation
- seminal vesicles – these are glands that produce many of the constituent ingredients of semen
- prostate gland – walnut-sized gland that releases fluid that nourishes and protects the sperm
- urethra – a tube that runs inside the penis and has the function of ejaculating the semen containing sperm from the penis.

AO3

- sperm cells mature in the epididymis
- seminal vesicles – fluids produced include fructose, prostaglandins and clotting factors. This makes up about 70% of semen
- the prostate gland secretes alkaline fluids to protect the sperm from the acidic walls of the vagina

	• the muscles of the prostate ensure that semen is forcefully pressed into the urethra during ejaculation. Accept other suitable responses.	

4 (c)	**The subcutaneous is a layer of the skin.** **Identify the** two (2) other **layers of skin.** Award **one (1)** mark for each correct identification: • epidermis (1) • dermis (1).	**2** **AO1=2**

4 (d) **Explain the process of excretion within the integumentary system.**

6

AO2=3

AO3=3

Level	Marks	Description
3	**5–6**	Application of knowledge is appropriate and accurate and shows clear understanding of the process of excretion within the integumentary system. Analysis to demonstrate understanding of the process of excretion within the integumentary system is detailed and highly effective, with clearly reasoned consequences. Clear links are made.
2	**3–4**	Application of knowledge is mostly appropriate, showing some clear understanding of the process of excretion within the integumentary system. There may be a few errors. Analysis to demonstrate understanding of the process of excretion within the integumentary system is effective and mostly relevant, with simplistic consequences. Some clear links are made.
1	**1–2**	Application of knowledge is limited and may show a lack of understanding of the process of excretion within the integumentary system. There may be a number of errors. Analysis to demonstrate understanding of the process of excretion within the integumentary system lacks detail and may have limited effectiveness and relevance. Links may be made but are often inappropriate.
	0	No creditworthy material.

	Indicative content **AO2** • Excretion – the process of eliminating or expelling waste matter. • Sweat glands – controlled by the sympathetic nervous system and used to regulate body temperature. • When the internal body temperature increases, the glands secrete water onto the skin. • This allows the skin to cool by evaporation. **AO3** • Sebaceous glands – small oil-producing glands present in the skin. • Usually attached to hair follicles and produce a fatty substance called sebum. This forms the slightly greasy surface to the skin and helps protect against excessive water absorption. • Apocrine sweat glands – usually associated with hair follicles and (in humans) concentrated in the underarm and groin areas. • They continually secrete a fatty sweat onto the skin, usually at times of stress. This is often broken down by local bacteria and becomes malodorous. Accept other suitable responses.	

4 (e)	**Identify** and **describe the component of the skin that detects changes to the external temperature.** Award **one (1)** mark for correct identification and up to **two (2)** marks for an accurate description. • Thermoreceptors (1) – sensory neurons (1) found in the dermis layer of skin (1), there are hot and cold receptors (1).	**3** **AO1=1** **AO2=2**

5 (a)	**Identify the** two (2) **actions of antagonistic muscle pairs** and **briefly describe** one (1) **of these actions.** Award **one (1)** mark for each correct identification and **one (1)** mark for a brief description: • flexion (1) – the action of decreasing the angle between bones at a joint (1) or bending of a limb or joint (1) • extension (1) – the action of increasing the angle between bones at a joint (1) thus extending the limb (1).	**3** **AO1=2** **AO2=1**

5 (b)	**Agonist and antagonist are roles of muscles.** **Identify** one (1) other **role of muscles** and **explain this role.** Award **one (1)** mark for correct identification: • synergist (1) • fixator (1). Award up to **three (3)** marks for a correct explanation: • synergist - stabilises the joint (1) around the movement which is occurring (1). Helps the agonist to function effectively in creating movement (1) • fixator - the movement of the muscle that stabilises the origin of the agonist (1) and the joint which it spans across (1). This eliminates unnecessary movement (1). Muscles may be fixated to more than one bone (1). Accept other suitable responses.	**4** **AO1=1** **AO3=3**

5 (c)	**Discuss how the structure of the appendicular skeleton assists body movement.** **Level** / **Marks** / **Description** **3** / **7–9** / A wide range of relevant knowledge and understanding of how the structure of the appendicular skeleton assists body movement is shown, which is accurate and detailed. Application of knowledge is appropriate and accurate and shows clear understanding of how the structure of the appendicular skeleton assists body movement. Analysis to demonstrate understanding of how the structure of the appendicular skeleton assists body movement is detailed and highly effective, with reasoned judgements related to the body movement made. Clear links are made. **2** / **4–6** / A wide range of relevant knowledge and understanding of how the structure of the appendicular skeleton assists body movement is shown, but may be lacking in sufficient detail, with a few errors. Application of knowledge is mostly appropriate, showing some clear understanding of how the	**9** **AO1=1** **AO2=4** **AO3=4**

		structure of the appendicular skeleton assists body movement. There may be a few errors. Analysis to demonstrate understanding of how the structure of the appendicular skeleton assists body movement is effective and mostly relevant, with simplistic judgements related to body movement made. Some clear links are made.
1	**1–3**	A limited range of relevant knowledge and understanding of how the structure of the appendicular skeleton assists body movement is shown, which is often fragmented. Application of knowledge is limited and may show a lack of understanding of how the structure of the appendicular skeleton assists body movement. There may be a number of errors. Analysis to demonstrate understanding of how the structure of the appendicular skeleton assists body movement lacks detail and may have limited effectiveness and relevance to body movement. Links may be made but are often inappropriate.
	0	No creditworthy material.

Indicative content

AO1

- Appendicular skeleton.
- Includes the bones of the shoulder girdle, the upper limbs, the pelvic girdle, and the lower limbs.

AO2

- Long bones – bones that are longer than they are wide and are often subjected to load during movement.
- They serve to support the weight of the body and facilitate movement.
- Joints – fibrous, cartilaginous and synovial joints offer increasing flexibility of movement in that order.
- Joints allow movement between bones.
- The most flexible are synovial joints which allow for gliding, angular, rotational and special movements.

AO3

- Cartilage – this is a firm tissue that is softer than bone. It is a connective tissue often found in joints.
- Cartilage reduces friction in a joint and increases elasticity and flexibility, to allow a range of movements.

	• Ligaments - ligaments connect bone to bone and appear as criss-cross bands. • This connection spans a joint and gives the joint stability during movement. • Attachment of muscles – muscles are attached to bones via tendons. • They pull the bone into movement as a muscle contracts and absorb some of the impact during movement. Accept other suitable responses.	

5 (d)	**The ribs and sternum are components of the axial skeletal system.** **Identify** one (1) other **component of the axial skeletal system** and **describe the function of this component.** Award **one (1)** mark for correct identification: • skull (1) • vertebral column (1). Award up to **three (3)** marks for an accurate description: • skull - forms the head in vertebrates (1) it supports the structures of the face (1) and provides a protective cavity for the brain (1) it is responsible for fixing the sensory organs of the head to allow for stereoscopic vison (1) and sound localisation (1) • vertebral column - central axis of the skeleton (1). Provides attachments to muscles (1). Supports the trunk (1). Protects the spinal cord (1). Accept other suitable responses.	**4** **AO1=1** **AO2=3**

Assessment Objective Grid

Question	AO1	AO2	AO3	Total
1 (a)	1			1
1 (b)		3	3	6
1 (c)		4		4
1 (d)		3	3	6
1 (e)	1	2		3
				20
2 (a)	2	2		4
2 (b)	1		3	4
2 (c)	2	5	5	12
				20
3 (a)	1		2	3
3 (b)	2	2		4
3 (c)	1	4	4	9
3 (d)		2	2	4
				20
4 (a)	1	2		3
4 (b)		3	3	6
4 (c)	2			2
4 (d)		3	3	6
4 (e)	1	2		3
				20
5 (a)	2	1		3
5 (b)	1		3	4
5 (c)	1	4	4	9
5 (d)	1	3		4
				20
Total	**20**	**45**	**35**	**100**