Cambridge Advanced National in H&SC AAQ Student Textbook – Answers for Unit F091

1.2

P88.

Recap questions

1. For fighting infections and to destroy cancer cells

2. To carry oxygen

3. When blood clots, platelets stick to a damaged blood vessel, forming a plug. Then, proteins in the blood (like fibrins) create a mesh to seal the wound and stop bleeding.

P90.

Recap questions 1

1. The pulmonary artery
2. From the right atrium; the blood content is low in oxygen because it is deoxygenated as it has circulated through the body and delivered oxygen to the tissues of the body

P93

Recap questions

1. 90/60 mmHg to 120/80 mmHg
2. SA node
3. The P wave shows the start of the heartbeat (atria contracting).
   The T wave shows the end of the heartbeat (ventricles recovering).

P93.

Apply your understanding

1. Inferior vena cava, right atrium, right ventricle, pulmonary artery, pulmonary vein, left atrium, left ventricle, aorta.
2. Some blood has been lost from the cardiovascular system. This means that less blood is occupying the same volume as the amount of blood Sophie had before the crash. Her blood pressure reading is low.
3. The fast heart rate (QRS complexes closer together) may be due to shock or a compensation for not enough oxygen – could be caused by blood loss. A fast heart rate can make the heart beats less efficient leading to lower oxygen levels. If it is caused by shock there could be serious consequences. If it is caused by blood loss she will need immediate treatment to reduce the blood loss and replace the fluids.

1.3

P95.

Recap questions

1. Oxygen, carbon dioxide, nutrients, waste products, hormones and urea.
2.

Feature	Arteries	Capillaries	Veins
Function	Move blood away from heart	Exchange substances	Move blood to the heart
Walls	Thick, muscular	One cell thick	Thin, less muscle
Lumen	Narrow	Very narrow	Wide
Pressure	High	Low	Low
Valves	No	No	Yes
Oxygen content	Usually high	Varies	Usually low

P100.

Recap questions

1. Angioplasty
2. Leaflet to include:
    - Causes: build-up of fatty acid called plaque in the walls the coronary artery. Caused by coronary heart disease This causes the coronary arteries to narrow so less blood can pass through meaning less oxygen gets to the heart.
    - Symptoms:
        - Tight chest
        - Chest pains
        - Breathlessness
        - Nausea, sickness, dizziness, fatigue and sweating
    - Risk factors:
        - Obesity
        - High fat and salt in the diet
        - Smoking
        - Diabetes
        - Stress

P104.

Recap questions

1. Low blood pressure.

2. The chemicals in cigarette smoke make blood clots more likely; smoking damages the lining of the blood vessels making clotting more likely; smoking impacts blood circulation making it more difficult for blood to get back to the heart and more likely to build up in veins and clot.
3. Leaflet to include:
    - Causes:
        - Damage caused to veins through injury
        - Long periods of inactivity
        - Some medical conditions
    - Impact
        - Pain at the site of the thrombosis
        - Swelling and inflammation
        - Redness at the site
    - Treatments include anticoagulant medication, thrombolytics, thrombectomy and filters.

      Anticoagulant medication:
        - Prevents further clots forming or existing ones getting bigger.
        - They do not get rid of existing clots so other treatments needed.
        - They are useful for preventing new incidences of DVT
        - Can cause excessive bleeding if cut.
        - Can interfere with other medication.
        - Can interact with vitamin K.

      Thrombolytics:
        - Break down clot so remove DVT.
        - Use the body's own clot removal systems (enzymes).
        - They are quick acting which reduces damage by the DVT.
        - They can risk excessive bleeding.
        - Not suitable for people at risk of bleeding or haemorrhagic stroke.

      Thrombectomy:
        - Physical removal of the clot using a tube inserted into the vein.
        - Variety of ways clot can be removed including medication, suction and laser.
        - Quick treatment of the clot and reduction of associated risks.
        - Can increase risk of infection at the site of the cut.

      Filters:
        - Use to reduce the risk of pulmonary embolism.
        - Physically block clots from passing into heart via vena cava vein.
        - Useful for patients who cannot take anticoagulant medication.
        - Do not prevent further clots.
        - Can cause clotting at site of the filter.

P105.

Apply your understanding

1. Stopping smoking will lower Margaret's risk of many health conditions. Smoking is a major cause of the blood vessel damage that leads to atheroma and blood clots that cause angina. By stopping smoking she will lower the risk of making her condition worse. Stopping smoking will also lower blood pressure and put less strain on the heart. Her blood circulation should improve. Eating a healthy diet will help lower her cholesterol levels which is also a major

cause of angina. It will also help lower both blood pressure and inflammation, all of which will improve her condition and prevent further damage.

P105.

End of Topic Questions

1. Inferior vena cava vein (1)

2. Bicuspid valve (or mitral valve) – (1) The options need to be changed because they are currently not valves but blood vessels. Change the options to:

- Tricuspid valve
- Bicuspid valve
- Aortic valve
- Pulmonary valve

3. The following missing words in correct order (2):

- Low
- systolic

4. Mark as per marking grid. Answers can include the following (6):

Angioplasty

- A flexible tube is threaded through the cardiovascular system to the blockage in the coronary artery.
- A balloon is inflated to open a mesh (stent) which keeps the artery open
- Blood can flow more easily through.

Benefits

- Relief will be immediate.
- Risk of heart attack is reduced.
- It will improve Mary's quality of life.
- She may not need to use the nitrolingual pump

Limitations

- The stent can cause more clotting.
- There might be complications such as infections.
- She will probably have to make lifestyle changes such as stopping smoking and changing her diet.

Coronary bypass

- Uses a graft to make a new blood vessel to go around the blockage.
- The heart will need to be stopped during surgery so Mary will need to have her blood pumped by a machine.

Benefits

- It should improve symptoms immediately.
- It will improve her quality of life in the long run.
- It will reduce the risk of a heart attack improving her survival chances.

Limitations

- It is major surgery which takes a long time to recover from.
- It involves stopping the heart so there are high risks of complications during surgery.
- It won't prevent more clots from forming.

Recommendation

- Candidates can recommend the angioplasty because long recovery time of a heart bypass will impact on her ability to look after her husband so she would be likely to refuse treatment. Angioplasty is less invasive and quicker to recover from.

2.1

P108.

Recap questions

1. B) rings of cartilage
2. Diaphragm
3. Pleural

2.2

P109.

Recap questions

1. Inspiration, expiration
2. **Inspiration**: Chest volume increases then lung pressure drops and air enters
   Expiration: Chest volume decreases then lung pressure rises and air exits
3. Ribs/rib cage, diaphragm

2.3

P110.

Recap questions

1. Mind map should include:
   - **Thin walls (one cell thick)**: short diffusion distance
   - **Large surface area**: increases space for oxygen and carbon dioxide to diffuse
   - **Fluid lined**: allows gases to dissolve and diffuse more easily
2. If the distance was longer, diffusion would take too long and not enough oxygen would get into the blood

2.4

P112.

Recap questions

1. Aerobic respiration uses glucose and oxygen to produce energy (ATP) in cells. Carbon dioxide and water are waste products. This process happens in the mitochondria and provides the energy needed for all body functions.
2. ATP
3. ATP – adenosine triphosphate is the molecule of energy that is stored in a cell ready for use. Once the body has used the ATP for energy it changes into another molecule called adenosine diphosphate (ADP). The energy from cellular respiration is used to turn the ADP molecule back into ATP – much like a battery needing charging.

P112.

Apply your understanding

1. The runner will have been using anaerobic respiration during the sprint because he won't have been able to get oxygen to his muscles quickly enough.
2. Significantly more ATP is produced by aerobic respiration than anaerobic respiration. As the runner has been using mostly anaerobic respiration during the sprint, they are not making enough ATP for their needs and so cannot run any further at the moment and are therefore fatigued.

2.5

P116.

Recap questions

1.
   - Chest infections
   - Allergies
   - Medicine
   - Mould or damp
   - Environmental factors like pollen and temperature

2. Narrowed airways make it harder to breathe. This can reduce the amount of oxygen reaching the lungs. This can reduce the amount of oxygen reaching the lungs and entering the blood. When there is less oxygen available aerobic respiration is less efficient so the body produces less ATP for muscles and other functions.
3. It contains medicine (usually a bronchodilator) that relaxes the muscles around the airways and helps them to widen quickly. This makes breathing easier as it increases airflow and oxygen intake providing fast relief during an asthma attack or when symptoms flare up.
4. Cause weight gain; high blood pressure; bone loss; mood changes

P120.

Recap questions

1. The alveoli are filled with fluid instead of air so it is difficult to get fresh air into the lungs.
2. Causes: bacteria, bacterial pneumonia can only be caused by bacteria
   Prevention:

- Flu vaccinations – to prevent the flu from occupying the immune system so it cannot fight off the bacteria which causes the pneumonia
- Lifestyle changes:
  - Regular exercise
  - Stopping smoking
  - Hydration

P 120

Apply your understanding questions

1. Symptoms: Wheezing, shortness of breath, tight chest, coughing, fatigue, more mucus

   Treatments: Reliever inhaler, encourage slow and deep breaths, use a nebulis er

P121.

End of topic practice questions

1.

A	Broncus (1)
B	Trachea (1)
C	Rib (1)
D	Diaphragm (1)

2. Three of (3):
   - Oxygen uses diffusion to get from the alveoli to the blood.
   - There must be a diffusion gradient for oxygen to diffuse.
   - The concentration of oxygen in the alveoli is kept high by regularly replacing the air by breathing.
   - The concentration of oxygen in the blood is kept low as blood moves away from the lungs as soon as it is filled with oxygen.
   - The large number of alveoli gives a large surface area for the diffusion of oxygen.
3. Up to **three** marks (3):
   - Allergies cause inflammation causing widening of the airway walls.
   - Asthma is inflammation of the airways.
   - Allergies cause more mucus to be produced which narrows the airways.
   - Allergies damage the airways making them more sensitive to triggers.

3.1

P123.

Recap questions

1. The large intestine absorbs water and salts from undigested foods and forms sold waste (faeces) to be excreted. It also helps aid the absorption of vitamins into the blood from the colon.
2. Muscles in the walls (circular and longitudinal)

3.2

P125.

Recap questions

1. Mechanical digestion breaks the food down physically into smaller pieces. It happens in the mouth and the stomach.
2. Chemical digestion is where large food molecules are broken down into smaller molecules. Protein molecules are broken down into amino acids.

P125.

Apply your understanding

1. The cheese and ham sandwich contains protein, carbohydrates and fat. The carbohydrates, from the bread, will start to be digested in the mouth and will finish digestion in the small intestine. The protein, from the ham and cheese, will be digested in the stomach and then the small intestine. The fats, from the butter, will be digested in the small intestine.
2. Carbohydrase enzymes will digest the carbohydrates, protease enzymes will digest the proteins and lipases will digest the fats (lipids).

3.3

P128.

Recap questions

1. Assimilation is process of the body taking absorbed nutrients and using them in cells and tissues e.g.:
   - Amino acids build new proteins
   - Glucose is used for energy
   - Fatty acids are used or stored

   This happens mainly in the liver, muscles, and other tissues to support growth, repair, and energy needs.
2. Thin walls; porous walls (small gaps between the cells of the walls)
3. Fluid that surrounds the cells.

3.4

P132.

Recap questions

1. Leaflet should include:
   - Causes: often unknown but can be due to abnormal cell growth linked to inflammation, genetics or irritation in the lining of the colon
   - Symptoms: often no symptoms, but larger polyps can cause bleeding, blood in stools, diarrhoea, constipation, and abdominal pain.

- Risk Factors: polyps are more common in men and people over the age of 50, diets high in processed food, high in fat and low in fibre, genetic reasons, Crohn's disease and smoking

2. Inflammation

P137.

Recap questions

1. Leaflet to cover:
   - Causes: when there's too much cholesterol as it is one of the two constituents of gall stones or too much bilirubin produced from the breakdown of red blood cells
   - Treatments:
     - Nothing for small gallstones – they should clear up on their own
     - Pain relief and pain killers if the person is experiencing pain or discomfort
     - If they are bigger then surgery might be needed:
       - Laparoscopic cholecystectomy (keyhole surgery to remove gallbladder) — most common and effective.
       - Open cholecystectomy — for complex cases.
       - Endoscopic removal (ERCP) — if stones block bile ducts
   - Impacts:
     - Pain
     - Nausea/vomiting
     - Indigestion – and bloating especially after fatty meals.
     - Can cause complications such as: cholecystitis (gallbladder inflammation), pancreatitis, jaundice and infection
2. Via a physical examination. A doctor will feel the abdomen for hard areas which could indicate inflammation. The doctor might conduct a "Murphy's Test" which involves putting their hand on the top right area of the abdomen and asking the patient to breathe in. If there's pain then it's likely to be gallstones. Blood test to look for signs of inflammation, ultrasound to detect gallstones

P137.

Apply your understanding

1. Linda likely has bowel polyps because her symptoms of diarrhoea, constipation and blood in the stools is consistent with that. Linda has a few of the factors that make bowel polyps more likely. She is over 50 which is an age when polyps become more likely, and she smokes which increases the risk. She is overweight which might mean that she has a diet high in fat and processed food.

P137.

End of topic questions

1. The following in order (4):

- Fats
- Lacteals
- Glucose
- Capillaries

2. Mark as per marking grid (6). Answers can include the following:

- Bile is made from a mixture of cholesterol and bilirubin,
- If the balance between cholesterol and bilirubin is not right, crystals form and become gallstones.
- Gallstones can be made mostly of cholesterol or bilirubin.
- The stones will become larger and bock the bile duct.
- The blocked bile duct will mean that bile cannot get into the small intestine.
- This will affect the body's ability to digest fat.
- The gallbladder can become inflamed and cause a lot of pain.
- The inflammation of the gallbladder can make the liver not work properly leading to jaundice.
- Jaundice is where the bilirubin is not broken down properly so it circulates in the blood causing the skin and whites of the eyes to appear yellow.

4.1

P139.

Recap questions

1. Skull, mandible, cervical vertebrae, scapula, humerus, sternum, rib, ulna, radius, thoracic vertebrae, lumbar vertebrae, ilium, sacrum, ischium, femur, patella, tibia and fibula
2. The axial skeleton's function is to support and protect whereas the appendicular skeleton's main function is to help provide support and movement of the body.

P140.

Recap questions

1. Osteoclasts break down tissue by removing calcium and osteoblasts produce new tissue by adding calcium to existing bone tissue.

Page 142

Recap questions

1. Osteoclasts break down tissue by removing calcium and osteoblasts produce new tissue by adding calcium to existing bone tissue.
2. It allows movement between two or more bones e.g. the knee joint. It reduces friction so that the bones can move smoothly.
3. Shoulder, hip

P144.

Recap questions

1. Deltoids, biceps, quadriceps, hamstrings, gastrocnemius, pectorals, abdominals
2. Triceps

4.3

P148.

Recap questions

1. Leaflet should include
    - Pressure build up in the carpal tunnel which squashes the median nerve. Caused by:
        - Having a previous wrist fracture because it can cause swelling which puts pressure on the median nerve.
        - Being overweight because the excess fatty tissue presses on the median nerve.
        - Family history because families may share genes which make the carpal tunnel narrower.
        - Working with vibrating tools because the vibrations damage the nerves.
        - Computer-based activities because the wrists are help in a particular position for long periods and the typing causes vibrations.
        - Having rheumatoid arthritis because it causes inflammation which presses against the median nerve.
        - Hormonal changes such as pregnancy and menopause because they cause fluid retention which puts pressure on the wrist.
        - Hypothyroidism which also leads to fluid retention.

    - Symptoms:
        - Numbness
        - Tingling
        - Weakness of the arm
    - Diagnosis methods:
        - Physical examination
        - Ultrasound
        - Electromyography
2. Difficulty carrying out normal everyday tasks. It could also cause anxiety in relation to the condition itself and the need to have an operation.

P153.

Recap questions

1. Mind map should include
    - Causes:
        - Aging: cartilage naturally wears down with age
        - Repeated stresses on joints from sport or work
        - Previous joint injuries

    - Obesity – puts more pressure on joints
    - Genetics
    - Joint misalignment
- Risk factors:
    - Age
    - Obesity
    - Joint injury
    - Other conditions such as rheumatoid arthritis, gout and joint laxity
- Treatments:
    - Joint fusing surgery
    - Joint replacement surgery
    - Pain medication
    - Anit-inflammatory drugs

P154.

End of topic questions

1. One mark for each (2):
- Rest/take a break
- Warm

2. One mark for each (1):
    - The median nerve is being compressed.
    - Abnormalities in the tendons or ligaments that might cause the condition.
3. Osteoarthritis can develop as a result of cartilage getting worn and becoming thinner. The loss of cartilage means there is less friction between the bones of the joint which causes bones to rub together and reduces joint space (3).

4. One mark for each of the following (2):
    A. articular cartilage
    B. synovial fluid

5. Two of (2):
    - Reduces pain as bones no longer rubbing together.
    - Stabilises the joint.
    - Supports the weight of the individual better.

5.1

P157.

Recap questions

1. All areas of the body apart from the brain and spinal cord.
2. Include the following:
    - Motor neurones carry impulses from CNS to effectors (muscles or glands) whereas sensory neurones carry impulses from sense cells and organs to the CNS
    - Motor neurones have a long axon, sensory neurones have a long axon

- Motor neurones have a short dendron before the cell body, sensory neurones have a long dendron before the cell body.

P160.

Recap questions

1. An electrical impulse reaches the end of a neurone and triggers the release of neurotransmitters into the synaptic cleft. These chemicals cross the gap and bind to receptors on the next neurone, triggering a new electrical signal.
2. At the end of the axon.
3. Tiny gaps between Schwann cells in the myelin sheath

5.2

P162.

Recap questions

1. The process by which the internal environment is kept stable despite internal and external changes within the body.

P166.

Recap questions

1.

- Insulin is released when blood glucose levels are high. It lowers blood glucose by causing the conversion of glucose into glycogen, binds with receptors on cell membranes to allow glucose into the cells, causes cells to use proteins and fats for energy instead of glucose.
- Glucagon is released when blood glucose levels are low (such as when fasting). It raises blood glucose levels by: causing glycogen to be converted into glucose, causing cells to prioritise using glucose for energy

P166.

Apply your understanding

1. At first Antonio was dehydrated. Receptors in his body and brain detected that he did not have enough fluid. These receptors would send messages to the hypothalamus, the control centre for water level homeostasis. This would cause the pituitary gland to release antidiuretic hormone (ADH). Normal Antonio's kidneys will filter his blood and a lot of the water will be lost as urine. However, the ADH will cause the kidneys to hold onto as much water as possible. While ADH was running through his body, he would be keeping hold of water so his urine was concentrated and there was not much of it. After hours of fluids, he is no longer dehydrated so the receptors will stop sending messages to the hypothalamus and the pituitary will stop releasing ADH. Antonio's kidneys will stop holding onto water in the kidneys and it will make the urine much less concentrated.

5.3

P171.

Recap questions

1. Leaflet should include:
    - Causes: build-up of plaque in lining of blood vessels (atherosclerosis), blood clots, high blood pressure, high cholesterol, obesity and diet high in fat, sedentary lifestyle
    - Symptoms:
        - Face dropping
        - Weakness in the arms
        - Slurred speech
        - Headache
        - Blurred vision
        - Loss of consciousness
    - Treatments:
        - Thrombectomy: a surgical procedure to remove the clot from the blood vessel
        - Thrombolysis: a non-surgical procedure using medication to break down the clot

2. A stroke is caused by a blocked or burst blood vessel in the brain, cutting off blood supply and oxygen to brain cells, which then begin to die.
3. Signals are no longer being sent down the motor neurons to the arm muscles to make them move.

P176.

Recap questions

1. Mind map should include:
    - Causes: too much glucose in the blood stream causing insulin resistance meaning the cells failing to respond to the signals insulin sends leaving too much glucose in the blood. Pancreas needs to release more and more insulin and eventually the pancreas fails to work as it should. It is usually caused by lifestyle factors such as diet and sedentary lifestyles.
    - Risk factors:
        - Diet high in sugar
        - Sedentary lifestyle
        - Genetic factors
        - Obesity
        - Ethnicity: people of African, South Asian, Hispanic or Native American backgrounds have a higher genetic predisposition to develop type 2 diabetes
        - Age 45+
        - High blood pressure
        - High cholesterol levels
    - Control methods:
        - Diet:
            - Reduce amount of sugar in diet

        - Control amount of carbohydrates and reduce fast spiking carbohydrates
        - Increase fibre, vegetable and protein intake
        - Reduce processed food intake
    - Exercise: increase exercise aerobic, strength, flexibility and balance
    - Stress: practice methods to reduce stress such as mindfulness, relaxation etc
    - Surgical: Gastric band

P177.

Apply your understanding

1. Possible reasons for the stroke:

- Risk increases with age and Angela is 70 years old
- She may be overweight
- She is more likely to have an inactive lifestyle due to her age
- She may struggle to prepare healthy meals or not bother to due to living alone

P177.

End of Topic Questions

1. Two of (2):
    - Sweating
    - More blood flowing through capillaries of the skin
    - Hairs on the skin lying flat

2. Two of the following (2):
    - Some people experience nausea and diarrhoea as side effects.
    - It is not suitable for people with heart failure.
    - It does not work for everyone.

3. Mark as per marking grid. Answers can include the following (6):
    - She may not have enough energy to look after her children due to glucose not getting into her cells.
    - She will likely worry about the many other medical conditions diabetes put her more at risk of such as heart disease, circulatory problems and increased risk of infections.
    - She will have to attend medical appointments regularly which may affect her job and ability to look after her family.
    - She will have to make changes to her diet which may be difficult to coordinate with the rest of her family.
    - She may struggle to go out with friends with all the appointments and feeling tired.
    - The difficulties of the condition may cause conflict or strain in her family.

6.1

P179.

Recap questions

1. The narrow area between the vagina and the uterus
2. The uterus lining or endometrium

P181.

Recap questions

1. FSH and LH
2. Progesterone

P183.

Recap questions

1. Urethra
2. The scrotum is a pouch of skin which regulates the temperature of the testes and holds them in place. The testes are endocrine organs which secrete the hormone testosterone and make sperm.

P183.

Apply your understanding

1. The menstrual cycle has four main stages. It begins with the menstrual phase, where the uterus lining is shed, causing bleeding. Next is the follicular phase, where hormone signals stimulate the growth of egg follicles and the uterine lining begins to thicken. Around the middle of the cycle, ovulation occurs — a mature egg is released from the ovary. Finally, during the luteal phase, the body prepares for possible pregnancy by maintaining the uterine lining with progesterone. If fertilisation doesn't happen, hormone levels drop, the lining breaks down, and the cycle starts again.
2. The vans deferens are cut or tied or sealed to prevent the semen traveling through the penis so no sperm are able to enter the vagina during intercourse. This means that fertilisation cannot take place.

6.2

P187.

Recap questions

1. Ovaries, fallopian tubes, pelvic region
2. Mindmap should include:
    - Physical impacts can include:
        - Pain preventing day to day activities (in some cases)
        - Periods can be very heavy
        - Reduction in red blood cells as a result of heavy bleeding
        - Infertility
    - Social impacts:
        - Withdrawal from social activities as a result of pain and fatigue
        - Impact on sexual relationships potentially because sex could be painful
        - The potential difficulty of becoming pregnant can put a strain on relationships
    - Emotional impacts:
        - Pain of the condition and anxiety can impact mental health

    - The difficulty getting pregnant can cause intense emotional pain
- Intellectual Impacts:
    - Possibility of being off school or work because of heavy periods/pain or discomfort
    - Pain can be a barrier for people carrying out activities that interest them

P191.

Apply your understanding questions

1. The lining of the uterus is called the endometrium and gets thicker and sheds every month because of hormones. People with endometriosis have that tissue growing in other places as well as the lining of the uterus. It will also thicken and shed every month controlled by hormones. Depending on where it is growing, it won't always have anywhere to shed to so it causes pain and damage to nearby tissues.

2. The endometriosis tissue might block the ovulation or movement of the egg. If it is in the ovaries, it can prevent ovulation. If it is in the fallopian tubes it can block the egg from getting to the uterus. It can also cause imbalances in hormones which can make it impossible to have children.

3. The best treatment option for Ellie is laparoscopic removal of endometriosis tissue. This will help relieve symptoms and remove blockages that are preventing her from getting pregnant. A hysterectomy would not be good because she would not be able to get pregnant. Hormone treatments act as contraceptives or produce an artificial menopause which will also stop her getting pregnant. Pain killers may relieve symptoms but do not address Ellie's inability to get pregnant.

P191.

Recap questions

1. Nausea; vomiting; hair loss; fatigue
2. Information leaflet should include:
    - Orchidectomy:
        - Benefits:
            - If caught early it can cure cancer completely
            - Quick recovery and usually performed as day surgery.
            - Minimal impact on sexual function or hormone levels if one testicle remains.
            - Allows for accurate diagnosis and staging of the cancer.
        - Limitations:
            - If both testicles are removed the individual will no longer be able to have children
            - May require testosterone replacement therapy
            - Can have a big psychological impact on the individual
    - Chemotherapy:
        - Benefits:

        - Highly effective and can remove cancer completely even in advanced stages
        - Can prevent recurrence
        - Often leads to a complete cure when used with or after surgery
        - Useful if cancer has spread to other parts of the body
    - Limitations:
        - Short term side effects: nausea, hair loss, vomiting, fatigue and increased infections
        - Can lead to infertility
        - Requires multiple sessions over weeks and months which can be physically and emotionally draining

P191.

End of topic questions

1. One mark each (2):
    - Produce hormones such as oestrogen
    - Produce eggs (ova)
2. FSH (1)
3. Vas deferens (1)
4. Mark as per marking grid (6). Answers can include the following:
    - A pelvic examination to feel for cysts and nodules.
    - Pelvic examination will locate where the pain is.
    - MRI scan will show areas affected by endometriosis.
    - MRI scans can be used to plan surgery.
    - Ultrasound can locate cysts caused by endometriosis.
    - Ultrasound cannot locate areas of endometriosis.
    - Laparoscopy is carried out under general anaesthetic.
    - The laparoscope can be used to see areas of endometriosis tissue.
    - Sometimes endometriosis tissue can be removed during a laparoscopy.