Reading A 01 - Skin Cancer

INSTRUCTIONS TO CANDIDATES

- DO NOT open this Question Paper or the Text Booklet until you are told to do so.
- Write your answers in the spaces provided in this Question Paper.
- You must answer the questions within the 15-minute time limit.
- One mark will be granted for each correct answer.
- Answer ALL questions. Marks are NOT deducted for incorrect answers.
- At the end of the 15 minutes, hand in this Question Paper and the Text Booklet.
- DO NOT remove OET material from the test room.

Text Booklet

Part A - Skin Cancer

TEXT A

Skin cancer (melanoma of the skin) is the third most commonly diagnosed cancer in males (after prostate and bowel cancer) and females (after breast and bowel cancer) in Australia. In 2016, an estimated 13,280 new cases of melanoma will be diagnosed in Australia, and 1,770 people will die. In Australia, between 1982 and 2016, the number of cases of skin cancer rose from 27 cases per 100,000 to an estimated 49 cases per 100,000. However, how much of this increase is due to a real increase in the underlying disease, and how much is due to improved detection methods, is unknown. The incidence of melanoma of the skin rose at around 5.0% per year during the 1980s, moderating to 2.8% per year after that up until 2010. It is predicted that the initial rapid increase is partly attributable to individual behaviour and the use of solariums, resulting in increased exposure to solar ultraviolet radiation. The moderated trend after the 1980s is consistent with increased awareness of skin cancer and improved sun protective behaviours as a result of extensive skin cancer prevention programs dating back to the 1980s. Melanoma is a commonly used term for skin cancer. Melanoma of the eye and of the ano-rectal area can also occur.

Text B

Over exposure to ultra violet (UV) light causes 95% of melanoma Skin cancer be prevented through skin protection and early identification.

Skin protection includes:

- Seeking shade especially during summer peak hours of 10 am – 4 pm.
- Wearing clothing that covers back, shoulders, arms and legs.
- Wearing a broad-brimmed hat • wearing wrap round sunglasses.

Early identification involves checking moles and freckles for changes that fall into 5 categories of ABCDE:

- Asymmetry when one-half of a mole or birthmark does not match the other.
- Border irregularity when the edges are irregular, ragged, notched, or blurred.
- Colour variation when the colour is not the same all over, but may have differing shades of brown or black, sometimes with patches of red, white, or blue.
- Diameter of the mole is larger than 6 mm (about the size of a pencil eraser) or is growing larger.
- Evolving in size, shape, colour, elevation, or another trait (such as itching, bleeding or crusting).(This last point is likely the strongest of all of the warning signs)

Melanoma of the skin can develop anywhere on the body including:

- Scalp – so check through hair.
- Ears and nostrils.
- Underarms.
- Hands and nail beds.
- soles of the feet.

Specialist mole check centres are increasingly available to carry out a thorough check for early changes and monitor at risk moles and spots. Seeking medical advice if any of the ABCDE signs appear is vital.

Text C

Sunscreen use

Three national surveys during summers between 2003-04 and 2010-11 show that sun protection compliance while outdoors on the weekend during peak UV radiation hours was relatively low.

Table 1 Trends in adolescents' weekend sun protection behaviours and sunburn:

Adolescents (12 – 17), n = 2,718	2003 - 04	2006 - 07	2010 - 11	Significant changes in 2010 – 11 (%)
Respondents outdoors > 15 minutes	80%	82%	77%	↓ Since 2006 - 07
Time spent outdoors (minutes)	110	111	112	No change
Hat used	38%	29%	23%	↓ Since 2003 - 2004
Sunscreen used (at least SPF 15+)	37%	37%	37%	No change.
¾ or long-sleeved top worn.	11%	9%	11%	No change
¾ or longer leg cover worn	37%	30%	28%	↓ since 2003 – 04
Sunglasses	23%	24%	24%	No change
Stayed mostly in the shade.	19%	20%	21%	No change
Two or more sun-protective behaviors	29%	22%	24%	↓ since 2003 – 04
Weekend sunburn	20%	24%	21%	↓ since 2003 – 04 & 2006 – 07.

Text D

A staggering two in three Australians will be diagnosed with skin cancer before the age of 70, which is why it is so important that we learn about skin cancer and sun protection.

The major cause of skin cancer is overexposure to the sun's ultraviolet (UV) radiation. The more exposure you have over your lifetime, the greater your risk of cancer. Working outdoors will increase skin cancer risk, as will a history of severe sunburns and tanning.

Having a history of skin cancer in the family, a large number of moles, fair skin or red hair may also make a person more susceptible to developing skin cancer.

Questions 1-7

- For each question, 1-7, decide which text (A, B, C or D) the information comes from.
- You may use any letter more than once.

In which text can you find information about:

1. The ABCDE guide to identifying mole changes of concern.

   Ans: _____.
2. The rise in the number of cases of skin cancer in Australia between 1982 and 2016.

   Ans: _____.
3. What makes a person susceptible to skin cancer.

   Ans: _____.
4. Trends in sunscreen use among adolescents.

   Ans: _____.
5. The age of most people who are diagnosed with skin cancer.

   Ans: _____.
6. The most commonly diagnosed cancers among men and women in Australia.

   Ans: _____.
7. The skin protection is needed to prevent skin cancer.

   Ans: _____.

Questions 8-14

Answer each of the questions, 8-14, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

8. What are increasingly available to carry out thorough checks for early changes?
   Ans: _____.
9. The use of solariums has resulted in the increased exposure to what type of radiation?
   Ans: _____.
10. Surveys were carried during summers between 2003-04 and 2010-11 to check what sort of compliance over weekends.
    Ans: _____.
11. What other areas of the body apart from skin and eye can develop melanoma?
    Ans: _____.
12. During surveys carried out of adolescent behaviours, what use was constant at 37%?
    Ans: _____.
13. What hours should a person seek shade in peak summer hours?
    Ans: _____.
14. Working where will increase the risk of developing skin cancer?
    Ans: _____.

Questions 15-20

Complete each of the sentences, 15-20, with a word or short phrase from one of the texts.
Each answer may include words, numbers or both.

15. How much the increase in numbers of people with skin cancer is due to _____ methods, is unknown.
16. Over exposure to ultra violet (UV) light cause _____.
17. Having _____ skin or _____ hair may also make a person more susceptible to developing skin cancer.
18. The incidence of melanoma of the skin rose at around _____ per year during the 1980s.
19. Diameter of the mole is _____ (about the size of a pencil eraser) or is growing larger.
20. Sun protection compliance while outdoors on the weekend during peak UV radiation hours was _____.

End of Reading Part A | This booklet will be collected from you.

- Once it is collected, Part B and C will start.
- This means, you will not get a second chance to modify the Part A answers.
- Complete Part A answers before handover.

Reading A 02 - Acute Diarrhoea

Part A - Acute Diarrhea Text Booklet

Text A

Acute diarrhea is one of the most commonly reported illnesses in the United States, second only to respiratory infections. Worldwide, it is the leading cause of mortality in children younger than four years old (infants and young children are always much more susceptible) in both developing and underdeveloped countries. Definition: An abnormal looseness of the stool, changes in stool frequency, consistency, urgency and continence (an increased number of stools or looser form than is customary for the patient, lasting less than 2 weeks, and often associated with abdominal symptoms such as cramping, bloating and gas). Although often mild, acute diarrhea can lead to severe dehydration as a result of large fluid and electrolyte losses.

Text B

Acute, watery diarrhea is usually caused by a virus, rotavirus (viral gastroenteritis.) It can also occur due to food poisoning (common agents are salmonella and campylobacter). Medication such as antibiotics and drugs that contain magnesium products are also common offenders. Recent dietary changes can also lead to acute diarrhea; these include: intake of coffee, tea, colas, dietetic foods, gums or mints that contain poorly absorbable sugars. Acute bloody diarrhea suggests a bacterial cause like campylobacter, salmonella or shigella. Traveling to developing areas of the world can result in exposure to bacterial pathogens common in certain areas and eating contaminated foods such as ground beef or fresh fruit can cause diarrhea due to E. coli 0157:H7. Most episodes of acute diarrhea resolve themselves quickly and without antibiotic therapy, with simple dietary modifications. See a doctor if you feel ill, have bloody diarrhea, severe abdominal pain or diarrhea lasting more than 48 hours. In patients with mild acute diarrhea, no laboratory evaluation is needed because the illness generally resolves itself quickly (patients typically recover in 10-15 days). Your doctor may perform stool cultures or parasite exams if your diarrhea is severe or bloody, or if you travelled to an area where infections are common. The doctor will want to talk to you about your symptoms to try to identify a cause. The doctor will also want to examine you, including your abdomen and possibly your back passage. The most important test to perform at this stage is an examination of your stool to determine whether there are any infective agents present that might be the cause of the diarrhea and other symptoms. It may also be necessary to examine the bowel by endoscopy to determine whether there is inflammation in the rectum or colon (colitis).

Text C

Table 4: Clinical Evaluation of Dehydration

SYMPTOMS AND SIGNS	MILD DEHYDRATION	MODERATE DEHYDRATION	SEVERE DEHYDRATION (2 signs present) (2 signs present)
General Appearance			
Young children	Thirsty, anxious, alert.	Thirsty, alert or quiet but irritable when disturbed.	Drowsy, floppy, cyanotic, sometimes, comatose.
Older children & Adults	Thirsty, alert	Thirsty and alert.	Generally conscious, anxious, cold extremities, clammy, cyanosis, wrinkled skin of fingers, muscle cramps, dizzy if standing
Pulse	Normal	Rapid	Rapid, thready, sometimes absent.
Respiration	Normal		Deep and rapid.
Anterior fontanelle (6 – 18 months)	Normal	Depressed	Severely depressed.
Systolic BP	Normal	Normal	Low, sometimes unmeasurable.
Skin Elasticity	Normal: Fold of pinched skin disappears at once.	Decreased	Fold disappears very slowly (>2 seconds)
Eyes		Sunken	Severely sunken.
Tears		Absent	Absent

Mucous membranes (test mouth with a clear finger)	Moist	Dry	Very dry.
Urine Output	Normal	Reduced, urine dark	Anuria, empty bladder
% of body weight lost	1-5%	6 - 9%	10% and more
Estimated fluid deficit	10-50 ml/kg	60-90 ml / kg	100 ml/kg

Text D

Treatment for Diarrhea:

Always see your doctor if you experience serious symptoms. Babies and young children with diarrhoea need prompt medical attention. Treatment for diarrhoea depends on the cause, but may include: Plenty of fluids to prevent dehydration Oral rehydration drinks to replace lost salts and minerals. These drinks are available from pharmacies. An alternative is one-part unsweetened pure fruit juice diluted with four parts of water Intravenous replacement of fluids in severe cases Medication such as antibiotics and anti-nausea drugs Anti-diarrheal medication, but only on the advice of your doctor. If your diarrhea is caused by infection, anti-diarrheal drugs may keep the infection inside your body for longer Treatment for any underlying condition, such as inflammatory bowel disease.

PART A TIME:

15 minutes

- Look at the four texts, A – D, in the separate Text Booklet.
- For each question, 1-20, look through the texts, A-d, to find the relevant information.
- Write your answers on the spaces provided in this Question Paper.
- Answer all the questions within the 15-minute time limit.

Questions 1-7

For each of the questions, 1-7, decide which text (A, B, C or D) the information comes from.
You may use any letter more than once

1. Causes of acute diarrhea.

   Ans: _____.
2. Pathological investigation involved in case of severe diarrhea.

   Ans: _____.
3. Information regarding maintenance of hydration.

   Ans: _____.
4. Information regarding symptoms associated with acute diarrhea.

   Ans: _____.
5. An explanation regarding evaluation of severity of dehydration.

   Ans: _____.
6. Information regarding treatment of diarrhea.

   Ans: _____.
7. Acute diarrhea can be managed without antibiotics.

   Ans: _____.

Questions 8-14

Answer each of the questions, 8-4, with a word or short phrase from one of the texts.
Each answer may include words, number of the both.
Your answers should be correctly spelled.

8. What is the causative organism for acute watery diarrhea?

   Ans: _____.

9. In which classification of dehydration, skin elasticity is very poor?
   Ans: _____.
10. What is recommended to maintain the lost minerals in the body due to diarrhea?
    Ans: _____.
11. What should be done if acute diarrhea does not resolve by itself with simple dietary modification?
    Ans: _____.
12. What are the abdominal symptoms associated with acute diarrhea?
    Ans: _____.
13. What happens to the urine output, when a person suffers from severe dehydration?
    Ans: _____.
14. What is the causative organism for acute diarrhea?
    Ans: _____.

Questions 15-20

Complete each of the sentences, 15- 20, with a word or short phrase from one of the texts.
Each answer may include words, number or both.
Your answers should be correctly spelled

15. _____ are administered in case of severe diarrhea.
16. _____ may keep the infection inside the body if diarrhea is caused by an infection.
17. Acute diarrhea is leading cause of _____ in younger children worldwide.
18. If diarrhea is severe or bloody, the GP may perform _____.
19. Anterior fontanelle of infants would be _____ in case moderate dehydration.
20. It takes _____ to the pinched skin folds to disappear in case of severe dehydration.

End of Part A | You have to Submit the 2 Booklets Immediately.

- Once you have submitted the 2 Booklets, you will not be allowed to modify your answers.
- Double-check your answers before submitting.

Reading A 3 - Hantavirus

Text Booklets

Text A

Hantaviruses are a family of viruses which can cause serious illnesses and death. These viruses cause diseases like hantavirus pulmonary syndrome (HPS) and hemorrhagic fever with renal syndrome (HFRS). They are spread mainly by rodents and are not spread from person-to-person.

Hantaviruses can infect and cause serious disease in people worldwide. People get hantavirus from contact with rodents like rats and mice, especially when exposed to their urine, droppings, and saliva. It can also spread through a bite or scratch by a rodent, but this is rare.

Hantaviruses cause two syndromes. Hantaviruses found in the Western Hemisphere, including here in the U.S., can cause hantavirus pulmonary syndrome (HPS). The most common hantavirus that causes HPS in the U.S. is spread by the deer mouse.

Hemorrhagic fever with renal syndrome (HFRS) is a group of clinically similar illnesses caused by hantaviruses found mostly in Europe and Asia. However, Seoul virus, a type of hantavirus that causes HFRS, is found worldwide, including in the United States.

Text B

Hantavirus Pulmonary Syndrome (HPS)

HPS is a severe and potentially deadly disease that affects the lungs. Symptoms of HPS usually start to show 1 to 8 weeks after contact with an infected rodent. Early symptoms can include fatigue, fever, muscle aches, especially in the large muscle groups like the thighs, hips, back, and sometimes shoulders. About half of all HPS patients also experience headaches, dizziness chills, abdominal problems, like nausea, vomiting, diarrhea, and abdominal pain. Four to 10 days after the initial phase of illness, the late symptoms of HPS appear. These symptoms include coughing and shortness of breath. Patients might experience tightness in the chest, as the lungs fill with fluid. HPS can be deadly. Thirty-eight percent of people who develop respiratory symptoms may die from the disease.

Haemorrhagic Fever with Renal Syndrome (HFRS)

HFRS is a severe and sometimes deadly disease that affects the kidneys. Symptoms of HFRS usually develop within 1 to 2 weeks after exposure. In rare cases, they may take up to 8 weeks to develop. Initial symptoms begin suddenly and include intense headaches, back and abdominal pain, fever/chills, nausea and blurred vision. People may have flushing of the face, inflammation or redness of the eyes, or a rash. Later symptoms can include low blood pressure, lack of blood flow (acute shock), internal bleeding (vascular leakage) and acute kidney failure, which can cause severe fluid overload

The severity of the disease varies depending on the virus causing the infection. Hantaan and Dobrava virus infections usually cause severe symptoms where 5-15% of cases are fatal. In contrast, Seoul, Saaremaa, and Puumala virus infections are usually more moderate with less than 1% dying from the disease. Complete recovery can take several weeks to months.

Text C

Reducing risk

Eliminate or minimize contact with rodents in your home, workplace, or campsite to reduce your risk of exposure to hantaviruses. Seal holes and gaps in your home or garage to keep rodents from entering these spaces. Place traps in and around your home to decrease rodent infestation. Clean up any easy-to-get food, that might attract rodents.

Diagnosis

Diagnosing hantavirus in a person who has been infected less than 72 hours is difficult. If the initial test is done before the virus can be detected, repeat testing is often done 72 hours after symptom start. Early symptoms such as fever, headache muscle aches, nausea, and fatigue are easily confused with influenza.

A diagnosis of HPS or HFRS may be considered in a patient with exposure to rodents and signs and symptoms compatible with HPS and HFRS. If you suspect hantavirus disease, see a physician immediately and mention a potential rodent exposure.

Treatment and recovery

There is no specific treatment for hantavirus infection. Patients should receive supportive care, including rest, hydration, and treatment of symptoms. HPS can cause breathing difficulties, and patients may need breathing support, such as intubation. HFRS can disrupt kidney function. Patients with HFRS may need dialysis to remove toxins from the blood and maintain the right balance of fluids in the body when the kidneys aren't working well.

Text D

Transmission (US)

- The cotton rat, deer mouse, rice rat, white-footed mice.
- The virus lives in rodent leavings (feces and urine).
- Transmitted in the air when their nests are disturbed (releasing droplets with the virus).
- Sin Nombre is the most common strain in North America (carried by deer mouse).

Recent Outbreak

- 2 women + 1 man died out of 8 infected (HPS) in Yosemite National Park (as of September 13, 2012).
- Infected in the Signature Tent Cabins in Curry village. All 8 were hikers / campers.

Part A. Question Booklet

Questions 1-7

For each of the questions, 1-7, decide which text (A, B, C or D) the information comes from.
You may use any letter more than once.

1. A recent case of confirmed infection in the US.
2. High fatality of the Hantavirus infection.
3. The usual, preventable entry ways of the rodents.
4. A situation when diagnosing hantavirus is difficult.
5. The most common strain of hantavirus.
6. Repeat testing after a failed testing.
7. A medical procedure recommended for HPS.

Questions 8-14

Answer each of the questions, 8-4, with a word or short phrase from one of the texts. Each answer may include words, number of the both. Your answers should be correctly spelled.

8. What rodents carry hantavirus in the US?
9. Even in the absence of treatment, what should be treated when infected with hantavirus?
10. Patients with what condition need dialysis?
11. What are two more common late symptoms of HPS?
12. What spreads the most common hantavirus that causes HPS in the U.S?
13. Which virus from the hantavirus family is found outside the United States?
14. Which is not a very common early symptom of HPS?

Questions 15-20

Complete each of the sentences, 15- 20, with a word or short phrase from one of the texts. Each answer may include words, number or both. Your answers should be correctly spelled.

15. Hantavirus does not spread through _____.
16. Rarely, hantavirus infects a person when _____ by a rodent.
17. More than _____ of people who develop respiratory symptoms with HPS may die from the disease.
18. HFRS and HPS affect the _____ and the _____, respectively.
19. Symptoms of _____ usually develop earlier than HPS.
20. Rodents are attracted to _____ that are easily accessible.

End of Part A | You have to Submit the 2 Booklets Immediately.

- Once you have submitted the 2 Booklets, you will not be allowed to modify your answers.
- Double-check your answers before submitting.

Reading A 04 - Necrotising Fasciitis 2

Text A

Necrotizing fasciitis (NF) is a severe, rare, potentially lethal soft tissue infection that develops in the scrotum and perineum, the abdominal wall, or the extremities. The infection progresses rapidly, and septic shock may ensue; hence, the mortality rate is high (median mortality 32.2%). NF is classified into four types, depending on microbiological findings.

Table 1 Classification of responsible pathogens according to type of infection:

Microbiological type	Pathogens	Site of Infection	Co-morbidities
Type 1 (polymicrobial)	Obligate and facultative anaerobes.	Trunk and perineum	Diabetes mellitus
Type 2 (monomicrobial)	Beta-hemolytic streptococcus A	Limbs	
Type 3	Clostridium species Gram-negative bacteria Vibrios spp. Aeromonas hydrophila.	Limbs, trunk and perineum	Trauma Seafood consumption (for Aeromonas)
Type 4	Candida spp. Zygomycetes	Limbs, trunk, perineum	Immunosuppression.

Text B

Antibiotic treatment for NF

Type 1

- Initial treatment includes ampicillin or ampicillin–sulbactam combined with metronidazole or clindamycin.
- Broad gram-negative coverage is necessary as an initial empirical therapy for patients who have recently been treated with antibiotics, or been hospitalized. In such cases, antibiotics such as ampicillin–sulbactam, piperacillin–tazobactam, ticarcillin–clavulanate acid, third or fourth generation cephalosporins, or carbapenems are used, and at a higher dosage.

Type 2

- First or second generation of cephalosporins are used for the coverage of methicillinsensitive Staphylococcus aureus (MSSA).
- MRSA tends to be covered by vancomycin, or daptomycin and linezolid in cases where S. aureus is resistant to vancomycin.

Type 3

- NF should be managed with clindamycin and penicillin, which kill the Clostridium species.
- If Vibrio infection is suspected, the early use of tetracyclines (including doxycycline and minocycline) and third-generation cephalosporins is crucial for the survival of the patient, since these antibiotics have been shown to reduce the mortality rate drastically.

Type 4

- Can be treated with amphotericin B or fluoroconazoles, but the results of this treatment are generally disappointing.

Antibiotics should be administered for up to 5 days after local signs and symptoms have resolved. The mean duration of antibiotic therapy for NF is 4–6 weeks.

Text C

Supportive care in an ICU is critical to NF survival. This involves fluid resuscitation, cardiac monitoring, aggressive wound care, and adequate nutritional support. Patients with NF are in a catabolic state and require increased caloric intake to combat infection. This can be delivered orally or via nasogastric tube, peg tube, or intravenous hyperalimentation. This should begin immediately (within the first 24 hours of hospitalization). Prompt and aggressive support has been shown to lower complication rates. Baseline and repeated monitoring of albumin, prealbumin, transferrin, blood urea nitrogen, and triglycerides should be performed to ensure the patient is receiving adequate nutrition.

Wound care is also an important concern. Advanced wound dressings have replaced wet-to-dry dressings. These dressings promote granulation tissue formation and speed healing. Advanced wound dressings may lend to healing or prepare the wound bed for grafting. A healthy wound bed increases the chances of split-thickness skin graft take. Vacuum-assisted closure (VAC) was recently reported to be effective in a patient whose cardiac status was too precarious to undergo a long surgical reconstruction operation. With the VAC., the patient's wound decreased in size, and the VAC was thought to aid in local management of infection and improve granulation tissue.

Text D

Advice to give the patient before discharge:

- Help arrange the patient's aftercare, including home health care and instruction regarding wound management, social services to promote adjustment to lifestyle changes and financial concerns, and physical therapy sessions to help rebuild strength and promote the return to optimal physical health.
- The life-threatening nature of NF, scarring caused by the disease, and in some cases the need for limb amputation can alter the patient's attitude and viewpoint, so be sure to take a holistic approach when dealing with the patient and family.

Remind the diabetic patient to:

- Control blood glucose levels, keeping the glycated haemoglobin (HbAlc) level to 7% or less. • keep needles capped until use and not to reuse needles.
- Clean the skin thoroughly before blood glucose testing or insulin injection, and to use alcohol pads to clean the area afterward.

Questions 1 – 7

For each question, 1-7, decide which text (A, B, C or D) the information comes from. You may use any letter more than once.

In which text can you find information about:

1. The drug treatment required?

   Ans: _____.
2. Which parts of the body can be affected?

   Ans: _____.
3. The various ways calories can be introduced?

   Ans: _____.
4. Who to contact to help the patient after they leave hospital?

   Ans: _____.
5. What kind of dressing to use?

   Ans: _____.
6. How long to give drug therapy to the patient?

   Ans: _____.
7. What advice to give the patient regarding needle use?

   Ans: _____.

Question 8 – 14

Answer each of the questions, 8-14, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

8. Which two drugs can you use to treat the clostridium species of pathogen?

   Ans: _____

9. Which common metabolic condition may occur with NF?

   Ans: _____

10. What complication can a patient suffer from if NF isn't treated quickly enough?

    Ans: _____

11. What procedure can you use with a wound if the patient can't be operated on?

    Ans: _____

12. What should the patient be told to use to clean an injection site?

    Ans: _____

13. Which two drugs can be used if you can't use vancomycin?

    Ans: _____

14. What kind of infection should you use tetracyclines for?

    Ans: _____

Questions 15 – 20

Complete each of the sentences, 15-20, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

15. The average proportion of patients who die as a result of contracting NF is _____.
16. Patients who have eaten _____ may be infected with Aeromonas hydrophilia.
17. Patients with Type 2 infection usually present with infected _____.
18. Type 1 NF is also known as _____.
19. The patient needs to be aware of the need to keep glycated haemoglobin levels lower than _____.
20. The patient will need a course of to regain fitness levels after returning home.

End of Part A | You have to Submit the 2 Booklets Immediately.

- Once you have submitted the 2 Booklets, you will not be allowed to modify your answers.
- Double-check your answers before submitting.

Reading A 05 - Temporomandibular Joint Disorder

Text A

The temporomandibular joint (TMJ) is one of the most frequently used joints of the human body. It is used when speaking, chewing, yawning, swallowing and other activities during the day and even in sleep. The frequency of movement is assessed as about 1500-2000 times a day. The term 'temporomandibular disorder' (TMD) stands for a number of disorders related to the masticatory muscles or the TMJs and related structures. In the greatest number of cases, the cause of temporomandibular disorder is a disturbance of function in the form of increased muscular tonus and myofascial trigger points. It is essential to start treatment at the stage of mere dysfunction, i.e. at the stage when the changes are still reversible, in order to prevent irreversible structural changes. According to epidemiological statistics, 70% of the randomized population suffers from at least one symptom or sign of TMD, but only one fourth of this number is aware of it and only 5% seeks medical treatment.

Text B

Symptoms

Dull aching pain, which varies in strength from mild to severe, is the most common symptom associated with TMJ disorders. The pain is usually felt in the jaw, but can also be felt in the surrounding areas, including the face, ear, and even the teeth. The pain may also radiate to the neck or shoulders, and is usually made worse by chewing and moving your jaw. Other signs and symptoms associated with TMJ disorders include:

- Jaw tenderness.
- Jaw clicking, or popping, when you open and close your mouth or chew;
- A grating sensation when chewing;
- An uncomfortable or uneven bite.
- Jaw locking (an inability to open or close the mouth completely).

TMJ disorders can be temporary or chronic, but only a small proportion of people develop significant, long-term problems. Women tend to be affected by TMJ disorders more often than men.

Text C

Diagnosis and Treatment

A dentist can help identify the source of the pain with a thorough exam and appropriate X-rays. However, for some types of pain, the cause is not easily diagnosed. The pain may be related to the facial muscles, the jaw or the TM joint. Some TMJ problems result from arthritis, dislocation or injury. All of these conditions can cause pain and dysfunction. Muscles that move the joints are also subject to injury and disease. Injuries to the jaw, head or neck might cause some TMJ problems. Other factors relating to the way the upper and lower teeth fit together (the bite) may cause some types of TM disorders. Stress and teeth grinding are also considered as possible factors. There are several treatments for TMJ disorders. They may include stress-reducing exercises, wearing a mouth protector to prevent teeth grinding, orthodontic treatment, medication or surgery. Treatment may involve a series of steps beginning with the most conservative options. In many cases, only minor, non-invasive treatment may be needed to help reduce symptoms.

Text D

ABSTRACT: Effectiveness of specific physiotherapy in treatment of TMD

The aim of this study was to evaluate the effect of individual specific physiotherapy in the treatment of temporomandibular disorders, its immediate effect and its effect after two months. The research sample was comprised of 23 subjects, 17 women and 6 men, with an average age of 36.5 years. They complained of pain, sound phenomena and restricted mandibular movements. The patients were first examined by a stemmatologist who recommended physiotherapy. The effect of treatment was assessed according to the intensity of pain, the occurrence of reflex changes in soft tissues in the region of the masticatory muscles and digastricus muscle, the range of mouth opening and the intensity of sounds produced by mandibular

movements. It was found that after treatment pain was significantly reduced ($p<0.001$) at the temporomandibular joint (from 4.2 points to 0.7 point on the VAS [Visual Analogue Scale]). There were also fewer reflex changes in the muscles and fascias. The range of mouth opening increased significantly (from 37.3 mm to 41.3 mm, $p<0.001$) and the intensity of sounds was reduced from 100% to 43% ($p<0.001$). This state was maintained two months later: intensity of pain ($p<0.001$), mouth opening ($p<0.003$) and reduction of sound phenomena ($p<0.001$). Pain was ameliorated, the intensity of sounds reduced, and the range of movement significantly improved after specific physiotherapy.

Questions 1 – 7

For each question, 1-7, decide which text (A, B, C or D) the information comes from. You may use any letter more than once.

In which text can you find information about:

1. Frequently found symptom regarding TMJ disorders?

   Ans: _____.
2. Improvements noted after treatment.

   Ans: _____.
3. Right time to begin the treatment.

   Ans: _____.
4. The ratio of patients to the ones who get medical care.
5. Gender-wise prevalence of TMJ disorders.
6. How to reduce the symptoms?
7. The role of physiotherapy in the treatment.

Questions 8 – 14

Answer each of the questions, 8-14, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

8. Which healthcare professional normally does the diagnosis of TMJ disorders?

   Ans: _____.
9. What is the very common symptom exhibited by TMJ disorders?

   Ans: _____.
10. What does 'VAS' stand for based on the information given in the texts?

    Ans: _____.
11. What was the average age of the subjects in the research study?

    Ans: _____.
12. What is the term for the inability to open or close the mouth completely?

    Ans: _____.
13. What type of treatment was offered to the subjects in the research study?

    Ans: _____.
14. Where does a patient suffering from TMJ disorders normally sense the pain?

    Ans: _____.

Questions 15-20

Complete each of the sentences, 15-20, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

15. TMJ is one among the more regularly used _____ in our body.
16. Apart from the pain and sound phenomena, the subjects also complained about _____.
17. An oral guard is used to avoid _____.

18. Small, _____ may be required to reduce symptoms of TMJ in most cases.
19. TMJ disorders can be _____ or non-permanent.
20. The aching caused by TMJ disorders may also emanate to the _____.

End of Part A | You have to Submit the 2 Booklets Immediately.

- Once you have submitted the 2 Booklets, you will not be allowed to modify your answers.
- Double-check your answers before submitting.

Reading A 6 - Aspirin Overdose

Text A

Special warnings and precautions for use:

If you are receiving medical treatment, are asthmatic, allergic to aspirin or have or have had a stomach ulcer, seek your doctor's advice before taking this product.

The product labelling will include "Do not give to children aged under 16 years unless on the advice of a doctor".

There is a possible association between aspirin and Reye's Syndrome when given to children. Reye's Syndrome is a very rare disease which affects the brain and liver and can be fatal. For this reason aspirin should not be given to children aged under 16 years unless specifically indicated (e.g. for Kawasaki's disease).

Interaction with other medicinal products and other forms of interaction:

Aspirin may enhance the effects of anticoagulants and inhibit the effects of uricosurics.

Experimental data suggest that ibuprofen may inhibit the effect of low dose aspirin on platelet aggregation when they are dosed concomitantly. However, the limitations of these data and the uncertainties regarding extrapolation of ex-vivo data to the clinical situation imply that no firm conclusions can be made for regular ibuprofen use, and no clinically relevant effect is considered to be likely for occasional ibuprofen use.

Overdose

Salicylate poisoning is usually associated with plasma concentrations >350 mg/L (2.5 mmol/L). Most adult deaths occur in patients whose concentrations exceed 700 mg/L (5.1 mmol/L). Single doses less than 100 mg/kg are unlikely to cause serious poisoning.

Text B

Symptoms

Common features include vomiting, dehydration, tinnitus, vertigo, deafness, sweating warm extremities with bounding pulses, increased respiratory rate and hyperventilation. Some degree of acid-base disturbance is present in most cases.

A mixed respiratory alkalosis and metabolic acidosis with normal or high arterial pH (normal or reduced hydrogen ion concentration) is usual in adults and children over the age of four years. In children aged four years or less, a dominant metabolic acidosis with low arterial pH (raised hydrogen ion concentration) is common. Acidosis may increase salicylate transfer across the blood brain barrier.

Uncommon features include haematemesis, hyperpyrexia, hypoglycaemia, hypokalaemia, thrombocytopaenia, increased INR/PTR, intravascular coagulation, renal failure and non-cardiac pulmonary oedema. Central nervous system features including confusion, disorientation, coma and convulsions are less common in adults than in children.

Management

Give activated charcoal if an adult presents within one hour of ingestion of more than 250 mg/kg. The plasma salicylate concentration should be measured, although the severity of poisoning cannot be determined from this alone and the clinical and biochemical features must be taken into account. Elimination is increased by urinary alkalinisation, which is achieved by the administration of 1.26% sodium bicarbonate. The urine pH should be monitored. Correct metabolic acidosis with intravenous 8.4% sodium bicarbonate (first check serum potassium). Forced diuresis should not be used since it does not enhance salicylate excretion and may cause pulmonary oedema.

Haemodialysis is the treatment of choice for severe poisoning and should be considered in patients with plasma salicylate concentrations >700 mg/L (5.1 mmol/L), or lower concentrations associated with severe clinical or metabolic features. Patients under ten years or over 70 have increased risk of salicylate toxicity and may require dialysis at an earlier stage.

Text C

Treatment (Antiemetic)

5-HT3 receptor antagonists are most effective as antiemetics. Examples:

- Kytril (granisetron HCI), 10 μg/kg IV over 5 minutes in adults and (PEDS: children 2 years and older.
- Zofran (ondansetron),8 mg IVover 15 minutes (PEDS: > 2 years 0.15mg/kg)
- Anzemet (dolasetron),100 mg IV over 30 seconds (PEDS: > 2 years 1.8mg/kg)

Correct Acidosis

Sodium bicarbonate is frequently required to treat acidemia and to promote salicylate elimination by the kidneys. To correct metabolic acidosis caused by salicylate intoxication, administer 0.5 to 1.0 mEq/kg/lV bolus over 2 minutes and repeat as needed to maintain a blood pH of 7.4 to 7.5.

Text D

Medication:

Activated charcoal: To prevent more absorption, the doctor may give activated charcoal to absorb the salicylate from the stomach. A laxative may be given with the activated charcoal to move the mixture through the gastrointestinal system more rapidly. People who have been severely poisoned may be given repeated doses of activated charcoal.

IV fluids:

Dehydration occurs early in aspirin poisoning. To correct dehydration, the doctor will start an IV to provide fluids. The doctor will also work to correct imbalances in the body's blood chemistries.

Alkaline Diuresis: This is a way to reduce the amount of salicylate in the body. Alkaline diuresis is the process of giving a person who has been poisoned compounds that alter the chemistry of the blood and urine in a way that allows the kidneys to remove more salicylate. Specifically, sodium bicarbonate is given via IV to make the blood and urine less acidic (more alkaline). This encourages the kidneys to capture more salicylate that can leave the body through the urine. Sometimes, other compounds, such as potassium, also have to be given to help with this process.

Questions 1-7

In which text (A, B, C or D) can you find information about:

1. The various symptoms of patients who have taken too much aspirin.

   Ans: _____

2. Medicines necessary for treatment.

   Ans: _____

3. Deciding the overdose of a drug.

   Ans: _____

4. Precautions to keep children safe

   Ans: _____

5. Types of treatments for aspirin overdose.

   Ans: _____

6. Considerations in treatment management.
7. The number of other products that are associated with aspirin.

   Ans: _____

Questions 8-14

Complete each of the sentences, 8-14, with a word or short phrase from one of the texts.
Each answer may include words, numbers or both.

8. Sodium bicarbonate is given via _____ to make the blood and urine more alkaline.
9. We need to take into consideration of _____ and _____ factor while defining the severity of overdose poising. (Both answers should be correct)
10. If you are suffering from asthma, you need to contact _____ before taking aspirin.
11. _____ antagonists are used for treating over-poising.
12. Patients under ten years or more than 70 have expanded danger of _____ and may require dialysis at a prior stage.
13. Dehydration occurs in the _____ stage of poising.
14. _____ may inhibit the effect of low-dose aspirin.

Questions 15-20

Answer each of the questions, 15-20, with a word or short phrase from one of the texts. Each answer words, numbers or both.

15. Name the drug that enhances the effects of anticoagulants and inhibit the effects of uricosurics.
    Ans: _____.
16. What method will reduce the salicylate level in the body?
    Ans: _____.
17. Which chemical is required to treat academia?
    Ans: _____.
18. What will be provided primarily if a patient presents with over ingestion of aspirin?
    Ans: _____.
19. What is needed to take control dehydration?
    Ans: _____.
20. Question Missing | Will be provided.
    Ans: _____.

End of Part A

Reading A 7 - Migraines

Text A

Title: Management of migraine in New Zealand General Practice Authors: Spark, Vale & Mills (2006)

Objectives

To determine the proportion of patients who have a diagnosis of migraine in a sample of New Zealand general practice patients, and to review the prophylactic and acute drug treatments used by these patients.

Design, setting and participants

A cohort of general practitioners collected data from about 30 consecutive patients each as part of the BEACH (Bettering the Evaluation and Care of Health) program; this is a continuous national study of general practice activity in New Zealand. The migraine sub-study was conducted in June-July 2005 and December 2005-January 2006.

Main outcome measures

Proportion of patients with a current diagnosis of migraine; frequency of migraine attacks; current and previous drug treatments; and appropriateness of treatment assessed using published guidelines.

Results

191 GPs reported that 649 of 5663 patients (11.5%) had been diagnosed with migraine. Prevalence was 14.9% in females and 6.1% in males. Migraine frequency in these patients was one or fewer attacks per month in 77.1% (476/617), two per month in 10.5% (65/617), and three or more per month in 12.3% (76/617) (missing data excluded). Only 8.3% (54/648) of migraine patients were currently taking prophylactic medication. Patients reporting three or more migraines or two migraines per month were significantly more likely to be taking prophylactic medication (19.7% and 25.0%, respectively) than those with less frequent migraine attacks (3.8%) ($P < 0.0001$). Prophylactic medication had been used previously by 15.0% (96/640). The most common prophylactic agents used currently or previously were pizotifen and propranolol; other appropriate agents were rarely used, and inappropriate use of acute medication accounted for 9% of "prophylactic treatments". Four in five migraine patients were currently using acute medication as required for migraine, and 60.6% of these medication conformed with recommendations of the National Prescribing Service. However, non-recommended drugs were also used, including opioids (38% of acute medication).

Conclusions

Migraine is recognised frequently in New Zealand general practice. Use of acute medication often follows published guidelines. Prophylactic medication appears to be underutilised, especially in patients with frequent migraine. GPs appear to select from a limited range of therapeutic options for migraine prophylaxis, despite the availability of several other well documented efficacious agents, and some use inappropriate drugs for migraine prevention.

Text B

Table 1: Economic burden of migraine in the USA

	US$ Million		
Cost Element	Men	Women	Total
Medical	193	1,033	1,225
Missed Workdays	1,240	6,662	7,902
Lost Productivity	1,420	4,026	5,446
TOTAL			14,574

TEXT C

Case studies: migraine sufferers and work

Case 1:

"Jane" experienced pressure from employers due to her migraine absences. She had three days off work in the first quarter of the year, and this was deemed unacceptable and unsustainable by her employers; therefore she has just resigned from her job and hopes that her future employers will be more understanding.

Case 2:

"Sally's" employers and colleagues are aware of her migraine symptoms and are alert to any behaviour changes which might indicate an impending attack. In addition, colleagues have supporters' contact numbers, should she need to be escorted during a migraine. As her employers are part of the government 'Workstep Programme', she has accessed a number of allowances and initiatives: her migraines have been classified as a long-term health condition rather than sickness absence, which permits her a higher absence threshold. She now works flexible hours and has received funding for eye examinations, prescription glasses, and a laptop to enable her to work from home.

Text D

Research brief on migraines in the US

- Migraine prevalence is about 7% in men and 20% in women over the ages 20 to 64.
- The average number of migraine attacks per year was 34 for men and 37 for women.
- Men will need nearly four days in bed every year. Women will need six. The average length of bedrest is five to six hours.
- Only about 1 in 5 sufferers seek help from a doctor.

Questions 1-7

For each question, 1-7, decide which text (A, B, C or D) the information comes You may use any letter more than once. In which text can you find information about.

1. US expense 5446 million US & to treat the migraine in women.

   Ans: _____.
2. The average length of bed rest is 5-6 hours.

   Ans: _____.
3. Migraine prevalence is about 20% in women over the ages 20-64.

   Ans: _____.
4. The migraine sub study was conducted in January 2006 in New Zealand.

   Ans: _____.
5. Women needs 6 days in bed yearly to manage migraine.

   Ans: _____.
6. Prophylactic medication has been used previously by 15.0%.

   Ans: _____.
7. Four in five patient using acute medication for migraine

   Ans: _____.

Questions 8-14

Answer each of the questions, 8-14, with a word or short phrase from one of the texts. Each answer may include words, numbers or both. Your answers should be correctly spelt.

8. How many patients were studied in sparks program me?
   Ans: _____.
9. The average length of bed rest to treat migraine?
   Ans: _____.
10. What are the prophylactic agents used frequently?
    Ans: _____.
11. How much USA economic expense for migraine?
    Ans: _____.
12. How many migraines suffers seek medical help?
    Ans: _____.
13. What are the non-recommended drugs used by the migraine patient?
    Ans: _____.
14. What is the prevalence of migraine in females in the study conducted In 2006?
    Ans: _____.

Questions 15-20

Complete each of the sentences, 15-20, with a word or short phrase from one of the texts.

Each answer may include words, numbers or both. Your answers should be correctly spelt.

15. By contrast, the study found that a large proportion of migraine suffers used _____.
16. The case of _____ demonstrates that employers many not tolerate.
17. Migraine incidence was different across genders, with a _____ proportion of men diagnosed umpired in women
18. Being able to work _____ hours and having capacity to work at home makes working life more manageable.
19. Of the patient surveyed by spark, just over 8% were taking _____ at the time of study.
20. Concerning interventions, the US report found that most migraine suffers in the survey _____ medical practice.

End of part a | this text booklet will be collected.

Reading A 8 - MeftalSpas

Text Booklets

Text A

MeftalSpas, with Mefenamic acid as its active ingredient, is a medication that is commonly used for the relief of menstrual pain. Mostly, these medications are used for pain management after operative procedures and to relieve severe dysmenorrhoea. In addition to the pain-relieving property, it also can reduce heavy bleeding during menstruation called menorrhagia by decreasing menstrual blood loss. Mefenamic acid reduces pain associated with medical abortion, in-vitro fertilisation by preventing follicular rupture and reducing premature ovulation. It is also used to prevent preterm labour due to its uterine relaxant property.

The use of MeftalSpas-like drugs can induce reversible infertility in humans due to the blockage of the enzyme cyclooxygenase whose inhibition prevents normal reproductive processes. However, normal ovulation returns after stopping the medicine but this effect is seen in people using it frequently.

Text B

A non-steroidal anti-inflammatory drug for mild to moderate inflammation and pain, especially to treat menstrual pain, MeftalSpas is an effective nonsteroidal anti-inflammatory agent used to treat fever and pain. It is a chemical with extremely low solubility in water with a half life of 2hr. It is available as tablets, capsules and suspensions and more recently as gel preparation for skin application.

Mefenamic acid or meftalspas is widely used for pain due to:

- Headache
- Dental pain
- Dysmenorrhea
- Rheumatoid arthritis
- Osteoarthritis
- Other joint disorders

How does Mefenamic acid work?

Mefenamic acid, the dominant ingredient of Meftalspas, works by inhibiting prostaglandins, the group of chemical messengers found in a variety of areas of the body such as the stomach, kidneys, and sites of inflammation. In the stomach, prostaglandins increase secretion of a protective natural mucus lining. In addition, they modify the functions of certain cells that are responsible for inflammation.

Text C

How does the body expel mefenamic acid?	50% of a mefenamic acid dose is taken away from the body through urine. It can also get excreted through feces which accounts for 20%.
Who should avoid it?	People with cardiac ailments. It increases the risk or severity of gastrointestinal bleeding in patients on the anticlotting drug warfarin. Those who take certain medicines given to lower blood pressure. Avoid taking meftalspas together with: Methotrexate Aspirin Cyclosporine Other NSAIDs
Side Effects	Cardiovascular – thrombotic and bleeding episodes. GI Bleeding, Ulceration- Consuming this drug can lead to side effects such as gastrointestinal disorders, like gastrointestinal bleeding and gastric upset. Hepatotoxicity – It is potentially dangerous, can cause liver injury.

	Hypertension – Patients with high blood pressure should avoid (serious drug interactions). Renal toxicity and Hyperkalemia – It can be dangerous for the kidney as well. Serious skin reaction – Some people may exhibit allergic reactions. Hematologic toxicity – Bleeding disorders are common with this.
How to take Mefenamic acid?	Tablets – Most common form is as tablets of 500mg. Controlled release tablets containing mefenamic acid are also available which act for a longer period. Oral tablets are easy to take but other forms are also available. Gels – This is a greaseless topical form which is easily spreadable & easily removable. It is an emollient, non-staining acting for a longer period without much side effects. The gel form is transparent and pleasing in appearance.

Text D

Potential Side Effects of Mefenamic Acid

Mefenamic acid is considered quite a safe drug, and most people do not report serious side effects. However, in rare cases, some serious side effects can occur, such as:

A skin rash.
Shortness of breath.
Swelling of the body.
Flu-like symptoms, including severe weakness, swollen glands, fever, and muscular pain.
Bloody stools and/or cloudy urine.
Coughing up blood or vomit that looks like coffee grounds
Liver problems, including stomach pain on the upper right side, loss of appetite, and jaundice (yellowing of the eyes and skin)
Kidney problems, including shortness of breath, swollen feet and ankles, and little or no urination
Anemia due to low red blood cell count characterized by a pale and wan complexion, fatigue, light-headedness, shortness of breath, and cold hands and feet
Anaphylaxis.

The use of Mefenamic acid as an NSAID in Pregnancy

US FDA Drug Safety Communication (10-2020):

The FDA is requiring a new warning be added to NSAIDs including **Mefenamic acid** labelling describing the risk of fetal kidney problems that may result in low amniotic fluid. The FDA is recommending pregnant women avoid NSAID use at 20 weeks gestation or later. Through 2017, the FDA has received 35 reports of low amniotic fluid levels or kidney problems in mothers who took NSAIDs while pregnant. Five new-borns died; 2 had kidney failure and confirmed low amniotic fluid, 3 had kidney failure without confirmed low amniotic fluid. The low amniotic fluid started as early as 20 weeks of pregnancy. There were 11 reports of low amniotic fluid levels during pregnancy and the fluid volume returned to normal after the NSAID was stopped. The medical literature has reported low amniotic fluid levels with use of NSAIDs for varying amounts of time, ranging from 48 hours to multiple weeks. Complications of prolonged oligohydramnios may include limb contractures and delayed lung maturation.

Questions 1 - 7

For each question, 1 - 7, decide which text (A, B, C or D) the information comes from. You may use any letter more than once.

In which text can you find information about:

1. MeftalSpas side effects affecting bleeding.

   Ans: _____.

2. Fertilisation in a test tube.

   Ans: _____.

3. Drugs containing mefenamic acid are mostly without serious side effects.

   Ans: _____.

4. A common use of Meftalspas.

   Ans: _____.

5. NSAIDs and fetal complications.

   Ans: _____.

6. The most common use of MeftalSpas.

   Ans: _____.

7. Mefenamic acid dissolves in water but hardly and very slowly.

   Ans: _____.

Questions 8 - 14

Answer each of the questions, 8-14, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

1. A symptom, other than pain, that MeftalSpas can cure / treat.

   Ans: _____.

2. What is a more recent mode of application for MeftalSpas?

   Ans: _____.

3. Name of the group of chemical messengers that mefenamic acid can deactivate / stop.

   Ans: _____.

4. Stopping which enzyme prevents normal reproductive processes.

   Ans: _____.

5. What reverts to normal when frequent use of meftalspas is stopped?

   Ans: _____.

6. Which type of ovulation does Mefenamic acid reduce?

   Ans: _____.

7. What quality of Mefenamic Acid stops / reduces preterm labour?

   Ans: _____.

Questions 15 - 20

Complete each of the sentences, 15-20, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

1. Mefenamic Acid reduces heavy bleeding during menstruation by decreasing _____.
2. A _____ of mefenamic acid dissolves in water in 2 hours.
3. Taking Meftal Spas with other _____ can lead to complications.
4. Avoiding the ingestion of _____ is good to lower the risk of bleeding in the gastrointestinal system.
5. One of the potential side effects of Mefenamic acid is blood in _____.
6. Nonsteroidal anti-inflammatory drugs taken by pregnant women results in a decrease in _____.

End of Part A | Next: Part B

Reading A 9 - Gaucher Disease

Text booklet

Part A

- Look at the four texts, A-D, in the separate Text Booklet.
- For each question, 1-20, look through the texts, A-D, to find the relevant information.
- Write your answers on the spaces provided in this Question Paper.
- Answer all the questions within the 15-minute time limit.
- Your answers should be correctly spelt.

Text A

Gaucher disease is the most common of the lysosomal storage disorders (LSDs), which are metabolic conditions caused by genetic defects in the lysosomal system. The lysosome is an internal cell structure that contains numerous enzymes responsible for degrading complex cellular components. LSDs result from the absence or deficiency of a lysosomal enzyme and the subsequent accumulation of the enzyme's particular substrate in the body. The incidence of LSDs is estimated to range from one in 5,000 to one in 7,000 live births. Worldwide, Gaucher disease has a prevalence estimated to range from one in 40,000 to one in 60,000 in the general population and, though it is a pan ethnic disorder, in the Ashkenazi Jewish population its frequency is markedly higher, ranging from one in 400 to one in 1,000 live births. Carrier frequency in those of Ashkenazi descent is estimated to be as high as one in 18.

Text B

Skeletal Manifestations:

The skeletal manifestations of Gaucher disease are often the most debilitating, yet the pathogenesis of bone changes are not fully understood. Between 70% and 100% of patients with type 1 Gaucher disease have clinical or radiographic evidence of bone disease. Irreversible complications may influence long-term mobility and quality of life. The spine, pelvis, and femurs are usually affected; several different mechanisms of bone injury have been identified. The displacement of yellow marrow with red marrow because of Gaucher cell infiltration produces both physical and biochemical changes in the bone marrow microenvironment that can affect bone marrow vascularity and pressure, potentially causing thrombosis, infarction, and impaired haematopoiesis.

Text C

Osteomyelitis occurs in Gaucher disease

When osteomyelitis occurs in Gaucher disease, it is usually aseptic, though it's difficult to exclude pyogenic osteomyelitis at onset. Eventually, negative blood cultures allow clinicians to differentiate aseptic from pyogenic osteomyelitis. While it is impossible to predict major bone complications in patients with Gaucher disease, risk factors include anemia and splenectomy. In untreated patients, bone crises are reported to occur in 55% of splenectomized patients and 22% of patients with an intact spleen. Osteonecrosis is irreversible and often precipitates fracture and joint collapse.

Text D

Enzyme replacement therapy

Enzyme replacement therapy for the treatment of Gaucher disease became available in 1991 with the development of alglucerase (a placenta-derived GCase). Today, however, treatment involves the iv infusion of a recombinant GCase enzyme, which breaks down the accumulating lipid. Infusions are administered every two weeks. Three FDA-approved enzyme replacement therapies are currently available in the United States: imiglucerase (Cerezyme), velaglucerase alfa (Vpriv), and taliglucerase alfa (Elelyso). Enzyme replacement therapy has been shown to reduce the incidence of hepatosplenomegaly, normalize hematologic values, and

improve osteopenia. Risks of treatment include infusion reactions and antibody formation, which has the potential to render the drug inactive. Immunoglobulin G antibodies should be monitored routinely during the first year following diagnosis, with a baseline blood sample drawn before the patient's first infusion and blood draws repeated every three to six months. If antibody production is high, there is a risk of anaphylaxis. Overall, infusions are well tolerated, with the most common adverse effects being hypersensitivity reactions, which can be managed effectively with antihistamine premedication.

Questions 1-7

For each question, 1-7, decide which text (A B C D) the information comes from. You may use any letter more than once.

Say in which text you find information about the following.

1. A condition that occurs due to an increase in the number of white cells in the blood.

   Ans: _____.
2. Often, it is not possible to deal with complications.

   Ans: _____.
3. Recorded to be more effective in dealing with the disease conditions.

   Ans: _____.
4. Homicide of virtually all other parts of the cell by the enzymes.

   Ans: _____.
5. Almost fortnightly for effective management.

   Ans: _____.
6. Not-so-common when compared to other medical conditions.

   Ans: _____.
7. Weakening appearance.

   Ans: _____.

Questions 8-14

Answer each of the questions, 8-14, with a word or short phrase from one of the texts.
Each answer may include words, numbers or both.
Your answers should be correctly spelt.

8. What is the common reason for Gaucher Disease?

   Ans: _____.
9. Is it still clear how disease appears in its various forms or not?

   Ans: _____.
10. ERTs available include?

    Ans: _____.
11. What can lead to anaphylaxis?

    Ans: _____.
12. What is regarded as medically clean or without infection?

    Ans: _____.
13. What happens when Gaucher cell penetrate more deeply?

    Ans: _____.
14. What is regarded to be difficult when it comes to assessing the patient suffering from Gaucher Disease?

    Ans: _____.

Questions 15-20

Complete each of the sentences, 15-20, with a word or short phrase from one of the texts.

Each answer may include words, numbers or both.
Your answers should be correctly spelt.

15. The _____ have the capacity to exterminate various other cell structures.
16. With the appearance of red marrow, the _____ and _____often get affected more badly and may lead to infarction.
17. The two of the common conditions that can occur due to Gaucher may include _____ and _____.
18. It is requisite to monitor _____ during the first year.
19. Enzyme replacement therapy is known to be more effective in curtailing down the _____ and improving osteopenia.
20. Studies reveal that there are various other _____ which can make the conditions worse.

End of part A | this questions paper will be collected.

Reading A 10 - Obesity

Text Booklet

Text A

Overweight and obesity For the Identification and classification of overweight and obesity, use clinical judgement to decide when to measure a patient's height and weight. Opportunities include registration with a general practice, consultation for related conditions (such as type 2 diabetes and cardiovascular disease) and other routine health checks. Different weight classes are defined based on a person's body mass index (BMI) as follows:

- healthy weight: 18.5- 24.9 kg/m2
- overweight: 25- 29.9 kg/m2
- Obesity: 30- 34.9 kg/m2
- Obesity 35- 39.9 kg/m2
- Obesity Ill: 40 kg/m2 or more.

Interpret BMI with caution in highly muscular adults as it may be a less accurate measure of adiposity in this group. Some other population groups, such as people of Asian family origin and older people, have comorbidity risk factors that are of concern at different BM's (lower for adults of an Asian family origin and higher for older people).

Base assessment of the health risks associated with being overweight or obese in adults on BMI and waist circumference as follows. For men, waist circumference of less than 94 cm is low, 94—102 cm is high and more than 102 cm is very high. For women, waist circumference of less than 80 cm is low, 80—88 cm is high and more than 88 cm is very high. Use BMI (adjusted for age and gender) as a practical estimate of adiposity in children and young people. Interpret BMI with caution because it is not a direct measure of adiposity.

Text B

Interventions

Tailor dietary changes to food preferences and allow for a flexible and individual approach to reducing calorie intake. Do not use unduly restrictive diets, because they are ineffective in the long term and can be harmful. The main requirement of a dietary approach to weight loss is that total energy intake should be less than energy expenditure.

Diets that have a 600 kcal/day deficit (that is, they contain 600 kcal less than the person needs to stay the same weight) or that reduce calories by lowering the fat content (low-fat diets), in combination with expert support and intensive follow-up, are recommended for sustainable weight loss. Base the level of intervention to discuss with the patient initially as follows:

BMI Classification	Low waist circum.	High waist circum.	V high waist circum.	Comorbidities present.
Overweight	1	2	2	3
Obesity I	2	2	2	3
Obesity II	3	3	3	4
Obesity III	4	4	4	4

1. General advice on healthy weight and lifestyle.
2. Diet and physical activity.
3. Diet and physical activity; consider drugs.
4. Diet and physical activity; consider drugs; consider surgery

Text C

Pharmacological Interventions

Consider pharmacological treatment only after dietary, exercise and behavioural approaches have been started and evaluated. Consider treatment for patients who have not reached their target weight loss or have reached a plateau on dietary, activity and behavioural changes. Drug treatment is not generally recommended for children younger than 12 years.

Orlistat is indicated for weight loss in combination with a low-calorie, low-fat diet. It is available as 120mg capsules under the brand name Xenical and as 60mg capsules under the brand name Alli. Xenical is only available with a prescription, whereas Alli is available without a prescription under the supervision of a pharmacist. Orlistat is a potent, specific, and long-acting inhibitor of gastrointestinal lipases, which decreases the amount of fat absorbed from the diet.

Only prescribe orlistat as part of an overall plan for managing obesity in adults who meet one of the following criteria:

- a BMI of 28 kg/m2 or more with associated risk factors;
- a BMI of 30 kg/m2 or more.

NB: Initiate orlistat treatment only after careful consideration of the possible impact on efficacy of antiretroviral HIV medicines.

Text D

Surgical Options

Gastric Band

- Procedure type: Reversible.
- Band placed around top of stomach under general anaesthetic.
- No change to anatomy.
- Minimum BMI: 30
- Expected weight loss: 50-60% excess weight loss (avg 31 kilos)

Gastric Sleeve

- Procedure type: Non-reversible.
- 80% of stomach removed under general anaesthetic.
- Lower digestive system unaltered.
- Minimum BMI: 35
- Expected weight loss: 50-70% excess weight loss (avg. 45 kilos)

Gastric Bypass

- Procedure type: Non-reversible.
- Stomach cut to leave pouch. Intestines rerouted. All under general anaesthetic.
- Minimum BMI: 40
- Expected weight loss: 60-70% excess weight loss (avg. 63 kilos)

Gastric Balloon

- Procedure type: Temporary (6 or 12 months).
- Balloon placed endoscopically under light sedation. No change to anatomy.
- Minimum BMI: 27
- Expected weight loss: 12-19 kilos in 6 months.

Part A - Question Booklet

Look at the four texts, A-D, in the separate Text Booklet. For each question, 1-20, look through the texts A-D, to find the relevant information. Write your answers on the spaces provided in this Question Paper. Answer all the questions in the 15-minute time limit. Your answers should be correctly spelt. Obesity: Questions

Questions 1-7

For each question, 1-7, decide which text (A B, C or D) the information comes from. You may use any letter more than once.

In which text can you find information about:

1. Specific advice to give patients about their food intake.

   Ans: _____.

2. Tools for diagnosing degrees of obesity.

   Ans: _____.

3. Different types of medication to prescribe for obese patients?

   Ans: _____.
4. The success rate of different forms of surgery.

   Ans: _____.
5. How to establish whether adolescents are obese.

   Ans: _____.
6. Specific factors relating to certain ethnic groups.

   Ans: _____.
7. Factors informing the most appropriate intervention strategies.

   Ans: _____.

Questions 8-13

Answer each of the questions, 8-13, with a word or short phrase from one of the texts. Each answer may include words, numbers or both.

8. In which category should a patient with a BMI of 28.00 kg/m2 be placed?

   Ans: _____.
9. Which group of patients may be most at risk of comorbidities at high BMI?

   Ans: _____.
10. What daily calorie deficit is generally recommended?

    Ans: _____.
11. What sort of diets should patients be advised not to follow?

    Ans: _____.
12. What is the minimum age for patients receiving pharmacological intervention?

    Ans: _____.
13. Which type of surgery is not permanent if patients undergo a subsequent procedure?

    Ans: _____.

Questions 14-20

Complete each of the sentences 14-20 with a word or short phrase from one of the texts.
Each answer may include a word, numbers or both.

14. Patients diagnosed as Obesity II might be advised to consider surgery if they have _____.
15. Dietary changes should be recommended to women whose waist circumference is over _____.
16. Patients unable to tolerate a general anaesthetic might be advised to have _____ surgery.
17. Before gastric bypass surgery is considered, patients should have a BMI of more than _____.
18. A patient might expect to lose _____ in weight as a result of gastric band surgery.
19. Orlistat shouldn't be prescribed to patients taking _____ drugs.
20. BMI data may give false indications of obesity in adults whose body type is _____.

End of Part A | The 2 Booklets will be Collected