READING TEST 14

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.
- Your answers should be correctly spelt.

Text A

Aarskog-Scott syndrome

Aarskog-Scott syndrome is a genetic disorder that affects the development of many parts of the body. This condition mainly affects males, although females may have mild features of the syndrome. People with Aarskog-Scott syndrome often have distinctive facial features, such as hypertelorism, a small nose, a vertical groove between the base of the nose and the border of the upper lip called philtrum, and a widow's peak hairline. They frequently have mild to moderate short stature during childhood, but their growth usually catches up with that of their peers during puberty. Hand abnormalities are common in this syndrome and include brachydactyly, fifth finger abnormality called clinodactyly, cutaneous syndactyly, and a single crease across the palm. The intellectual development of people with Aarskog-Scott syndrome varies widely. Some may have mild learning and behavior problems, while others have normal intelligence. In rare cases, severe intellectual disability has been reported.

Text B

FGDI gene mutations are the only known genetic cause of Aarskog-Scott syndrome. The FGD1 gene provides instructions for making a protein that turns on (activates) another protein called Cdc42, which transmits signals that are important for various aspects of development before and after birth. Mutations in the FGD1 gene lead to the production of an abnormally functioning protein. These mutations disrupt Cdc42 signaling, leading to the wide variety of abnormalities that occur in

people with Aarskog-Scott syndrome. Only about 20 percent of people with this disorder have identifiable mutations in the FGD1 gene. The FGD1 gene provides instructions for making a protein that functions as a guanine nucleotide exchange factor (GEF). GEFs turn on proteins called GTPases, which play an important role in chemical signaling within cells. GTPases are turned off when they are attached to a molecule called GDP and are turned on when they are bound to another molecule called GTP.

Text C

The FGD1 protein activates the GTPase known as Cdc42 by stimulating the exchange of GDP for GTP. Once Cdc42 is active, it transmits signals that are critical for various aspects of development before and after birth, particularly the development of bones. The FGD1 protein may also be involved in the maintenance of the extracellular matrix. Through this process, the protein appears to play a role in cell movement (migration) and the remodeling of blood vessels. More than 40 mutations in the FGD1 gene have been found to cause Aarskog-Scott syndrome. When caused by FGD1 gene mutations, Aarskog-Scott syndrome is inherited in an X-linked recessive pattern. The FGD1 gene is located on the X chromosome, which is one of the two sex chromosomes. In males, one altered copy of the gene in each cell is sufficient to cause the condition. In females, a mutation would have to occur in both copies of the gene to cause Aarskog-Scott syndrome.

Text D

Because it is unlikely that females will have two altered copies of this gene, males are affected by X-linked recessive disorders much more frequently than females. Females who carry one altered copy of the FGD1 gene may show mild signs of the condition, such as hypertelorism, short stature, or a widow's peak hairline. A characteristic of X-linked inheritance is that fathers cannot pass X-linked traits to their sons. Evidence suggests that Aarskog-Scott syndrome is inherited in an autosomal dominant or autosomal recessive pattern in some families, although the genetic cause of these cases is unknown. In autosomal dominant inheritance, one copy of the altered gene in each cell is sufficient to cause the disorder. In autosomal recessive inheritance, both copies of the gene in each cell have mutations. The parents of an individual with an autosomal recessive condition each

carry one copy of the mutated gene, but they typically do not show signs and symptoms of the condition.

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 Remodeling of an intricate lattice of proteins.
Answer _____

2 Effects on allosomes.
Answer _____

3 Reasons not being known well.
Answer _____

4 Abnormally increased distance between two organs or body parts.
Answer _____

5 Rare disease inherited as X-linked.
Answer _____

6 Activating and deactivating proteins.
Answer _____

7 Major reason for the appearance of the disease conditions.
Answer _____

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 word or phrase may mean “short fingers”?
Answer _____

9 What is the term used to define fifth finger abnormality?
Answer _____

10 What is the cause of Aarskog-Scott syndrome?
Answer _____

11 Where do we find FGD1 gene?
Answer _____

12 What activates Cdc42?
Answer _____

13 What may suggest curved pinky fingers?
Answer _____

14 In which pattern single copy of the altered gene in each cell can cause the disorder?
Answer _____

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 _____ may define widely spaced eyes.

16 In_____, both copies of the gene in each cell have mutations.

17 _____, describes a condition in which there will be a webbing of the skin between some fingers

18 There are as many as_____ which are known to be causal agents of the disease.

19 The proteins called _____, play an important role in chemical signaling within cells.

20 _____ is a vertical groove between the nose and the upper lip.

PART B

In this part of the test, there are six short extracts relating to the work of health professionals. For questions 1-6, choose the answer (A, B or C) which you think fits best according to the text.

Atherosclerosis

The brain's vasculature relies on the central aorta, and there is a direct correlation between atherosclerosis of the central aorta and that of the neurovascular system. This relation between the brain's vascular system and the central aorta has been evaluated recently in terms of the central arterial pressure (CAP) and the compliance of the aorta. In the United States, there are 50 million hypertension patients, and 3 million patients exhibit normal self-adjustment, making them similar to patients with normal blood pressure (BP). The remaining patients exhibit malfunctioning self-adjustment. Clinical trials suggest that patients with high-resistance hypertension are more likely to develop cerebral thrombosis compared to patients with normal-resistance hypertension, when both groups are treated to the same extent by using antihypertensive medication.

Ultrasound of the abdominal aorta

Patients will undergo ultrasound imaging as part of the standard clinical surveillance programme with measurement of the maximum anteroposterior diameter of the aneurysm. Ultrasound scans will be performed every 6±2â€…months. A 3.5â€…MHz linear array transducer will be used to provide standard realtime longitudinal B-scan images of the AAA at the point of maximum diameter. Maximum anteroposterior AAA diameter and distensibility (pressure strain elastic modulus and stiffness) will be assessed. Scans will be undertaken by accredited clinical vascular scientists with an interobserver coefficient of variation of aortic diameter measurements of 3.5% in our laboratory.

Magnesium supplementation

The use of Magnesium supplementation in preventing arrhythmias in patients with congestive heart failure has long been established. Magnesium deficiency can lead to QT interval prolongation, ST-segment depression and low amplitude T waves Magnesium also influences the movement of other ions such as potassium, sodium and calcium across the cell membranes. The association between magnesium and potassium is probably best demonstrated in that magnesium deficiency is often accompanied by potassium deficiency. In patients with congestive heart failure, both magnesium and potassium are depleted with thiazide diuretics, particularly in patients requiring high doses of thiazide diuretics. It has been shown that the level of potassium in muscle will not normalise unless magnesium is replaced, even though serum potassium rises with repletion.

Ferumoxytol

Ferumoxytol (Rienso) is composed of USPIO coated with polyglucose sorbitol carboxymethyl ether. It is supplied as an aqueous colloidal product that is formulated with mannitol and presented in single-use vials ready for intravenous infusion. Each vial contains 510â€…mg of elemental iron in a volume of 17â€…mL of mannitol. The ferumoxytol dose (4â€…mg/kg) is removed from the vial and administered intravenously at a rate of up to 1â€…mL/s. The single dose is given immediately following the baseline MRI and 24–36â€…h before the post-contrast scan. Blood pressure is recorded before and 30â€…min after administration to monitor for hypotension. In a subset of patients (n=20), MRI scanning and USPIO administration will be repeated at <1â€…month and 1â€…year (up to a total of 3 doses of ferumoxytol in 1â€…year). Each dose of ferumoxytol equates to approximately 7% of total body iron.

Pulse wave parameter values and comparison of the estimated and measured BP values, for three representative patients participating in the clinical study.

Patient No.	Parameter values of pulse wave							Estimated BP value		Measured BP value	
	Samp	Stime	Namp	Ntime	Ptime	As	Ad	Ps	Pd	Ps	Pd
P-1	54.2	0.12	29.06	0.34	0.96	146	106	119	87	120	85
P-2	34.6	0.1	17.8	0.3	0.77	141	91.8	110	71	110	70
P-3	76.8	0.11	45.82	0.27	0.77	150	94	143	89	145	87

ata on Echocardiographic parameters

Characteristics	Mean	Std. Deviation
EDD	48.231	27.338
ESD	31.739	11.3724
Septum thickness	9.99	5.432
Posterior wall thickness	10.126	7.6555

EF	58.66	9.434
LA	38.59	17.611
E wave	0.7609	0.20333
A wave	0.8505	0.2128
E/A	0.9326	0.33171
Ea	0.165	0.16773
Aa	0.1655	0.14411
Sa	0.1596	0.19788
EF<0.45	31(7.4%)	
E/A<0.8	147 (35.1%)	
E/Ea	6.3484	
E/Ea>8-16	112 (26.7%)	
E/Ea>15	15 (3.6%)	

PART C

In this part of the test, there are two texts about different aspects of healthcare. For questions 7-22, choose the answer (A, B, C or D) which you think fits best according to the text.

Text 1: All About Agoraphobia

A phobia is generally defined as the unrelenting fear of a situation, activity, or thing that causes one to want to avoid it. The definition of agoraphobia is a fear of being outside or otherwise being in a situation from which one either cannot escape or from which escaping would be difficult or humiliating. Phobias are largely underreported, probably because many phobia sufferers find ways to avoid the situations to which they are phobic. The fact that agoraphobia often occurs in combination with panic disorder makes it even more difficult to track how often it occurs. Other facts about agoraphobia include that researchers estimate it occurs in less than 1% to almost 7% of the population and that it is specifically thought to be grossly underdiagnosed.

There are a number of theories about what can cause agoraphobia. One hypothesis is that agoraphobia develops in response to repeated exposure to anxiety-provoking events. The mental health theory that focuses on how individuals react to internal emotional conflicts (psychoanalytic theory) describes agoraphobia as the result of a feeling of emptiness that comes from an unresolved Oedipal conflict, which is a struggle between the feelings the person has towards the opposite-sex parent and a sense of competition with the same-sex parent. Although agoraphobia, like other mental disorders, is caused by a number of factors, it also tends to run in families, and for some people, may have a clear genetic factor contributing to its development.

The symptoms of agoraphobia include anxiety that one will have a panic attack when in a situation from which escape is not possible or is difficult or embarrassing. Examples of such situations include: using public transportation, being in open or enclosed places, being in a crowd, or outside of the home alone.

The panic attacks that can be associated with agoraphobia, like all panic attacks, may involve intense fear, disorientation, rapid heartbeat, dizziness, or diarrhea. Agoraphobic individuals often begin to avoid the situations that provoke these reactions. Interestingly, the situations that people with agoraphobia avoid and the environments that cause people with balance disorders to feel disoriented are quite similar; this leads some cases of agoraphobia to be considered as vestibular function (related to balance disorders) agoraphobia.

Interestingly, physicians often diagnose and treat agoraphobia, like other phobias, when patients seek treatment for other medical or emotional problems rather than as the primary reason that care is sought. As with other mental disorders, there is no single, specific test for agoraphobia. The primary-care doctor or psychiatrist will take a careful history, perform or refer to another doctor for a physical examination, and order laboratory tests as needed. If someone has another medical condition that he or she knows about, there may be an overlap of signs and symptoms between the old and the new conditions. Just determining that anxiety does not have a physical cause doesn`t immediately identify the ultimate cause. Often, determining the cause requires the involvement of a psychiatrist, clinical psychologist, and/or other mental health professional. In order to establish the diagnosis of agoraphobia, the professional will likely ask questions to ensure that the anxiety of the sufferer is truly the result of a fear of being in situations that make it impossible, difficult, or embarrassing to escape, rather than in the context of another emotional problem.

There are many treatments available for agoraphobia, including specific kinds of psychotherapy as well as several effective medications. A specific form of psychotherapy that focuses on decreasing negative, anxiety-provoking, or other self-defeating thoughts and behaviors (called cognitive behavioral therapy) has been found to be highly effective in treating agoraphobia. In fact, when agoraphobia occurs along with a panic disorder, cognitive behavioral therapy - with or without treatment with medication - is considered to be the most effective way to both relieve symptoms and prevent their return. For example, sometimes patients respond equally as well when treated with group cognitive behavioral therapy or a brief course of cognitive behavioral therapy as they do when treated

with traditional cognitive therapy. Psychotherapy for agoraphobia is effective for many people when they receive it over the Internet, which is positive news for people who live in areas that are hundreds of miles from the nearest mental health professional.

Another form of therapy that has been found to be effective in managing agoraphobia includes self-exposure. In this type of intervention, the person either imagines or puts him or herself into situations that cause increased levels of agoraphobic anxiety, using relaxation techniques in each situation in order to master their anxiety. As people gain access to the Internet, there is an increasing evidence that exposure therapy can also be done effectively through that medium. Phobias are also sometimes treated using beta-blocker medications, which block the effects of adrenaline on the body, for example, propranolol.

Text 1: Questions 7-14

8 Tracking down Agoraphobia is;

- A. Easy because it is associated with pain disorders.
- B. Difficult as it is related to mood fluctuations.
- C .Sometimes difficult and sometimes easy.
- D .Not given

9 Agoraphobia occurs due to;

- A .Anxiety-provoking events. B.
- Internal emotional conflicts.
- C .Unresolved Oedipal conflict.
- D. All of the above.

10 Agoraphobia is;

- A. Genetic
- B .Non-genetic
- C. Sometimes genetic
- D. Can`t say

11 Virtually all of the medical conditions similar to Agoraphobia have;

- A. No specific tests
- B .Specific tests
- C .A and B
- D. It is not given

12 A patient suffering from Agoraphobia will have to undergo.

- A .Physical examination
- B .Laboratory tests
- C. Mental Health tests
- D .None

13 Cognitive behavioral therapy is considered to be highly effective;

- A. With medications.
- B. Without medications.
- C .With or without medications.
- D .In providing relief and stopping the re-occurrence of the disease.

14 Self Exposure Therapy is;

- A. For mild to intense agoraphobia issues.
- B. For people with years of agoraphobia.
- C. A & B
- D. Not given

Text2: Xerostomia

Dry mouth is a condition that usually occurs due to a decreased production of saliva. At times, xerostomia can make it difficult to speak and may lead to malnutrition. Extreme dry mouth and salivary gland dysfunction can produce significant and permanent mouth and throat disorders and can impair a person`s quality of life. Dry mouth is also called xerostomia and it affects about 10% of all people; it is more prevalent in women than men and it affects children in some rare

cases. Disorders of saliva production affect elderly people and those who are taking prescription and nonprescription medications most frequently.

There are many different causes of dry mouth. Dry mouth most commonly occurs as a side effect of medications that cause a decrease in saliva production, including blood pressure medications, antihistamines, antidepressants, diuretics, nonsteroidal anti-inflammatories, and many others. Other causes of dry mouth are radiation treatments to treat cancerous tumors of the head and neck, salivary gland diseases, diabetes, hormonal imbalance, mouth breathing, sleep apnea, and autoimmune disorders such as Sjögren`s syndrome, rheumatoid arthritis, and systemic lupus erythematosus. Eating disorders, such as bulimia and anorexia, are other risk factors for developing xerostomia. Salivary production can be decreased if a major salivary duct becomes blocked, such as from a stone or infection. Dry mouth will often occur during pregnancy or breastfeeding due to dehydration and hormonal changes. Other causative factors include stress, anxiety, depression, and dehydration.

People complaining of dry mouth may have trouble speaking, eating, tasting the food, and swallowing. Frequently, a dry mouth may be most noticeable at night during sleeping, especially in mouth-breathers. The dryness may cause chapped or cracked lips, dry eyes, dry throat, pale gums, headaches, dizziness, bad breath or a persistent cough. Those affected may also complain of sores in their mouth, or a white tongue indicative of a fungal infection like yeast (candidiasis). Fungal infections occurring in an individual with dry mouth may be associated with another underlying disease or disorder such as Addison`s disease, HIV, or diabetes. A burning tongue or throat, periodontitis, ulcers, sores, and inflamed soft tissue are also all effects of oral dryness. Without a sufficient quantity of saliva to wash food particles off the teeth, neutralize acids in the mouth, and battle the bacteria population, a person frequently develops multiple cavities - especially around the gum line.

When the dry mouth is detected, the dentist can be helpful in obtaining a proper diagnosis, which will help in developing a plan for management and treatment. The dentist will inspect the main salivary glands and ducts to check for blockages

and may measure both stimulated and unstimulated salivary flow. The lips, tongue, and oral tissues will also be inspected for dryness. Sometimes a patient will still complain of dry mouth even if the salivary flow is adequate. Since the symptoms of dry mouth vary greatly from individual to individual, the treatments also vary. Sometimes treatments are given for prolonged, chronic complaint of dry mouth, even without clinical signs of changes within the mouth. There is really no way to prevent dry mouth, only the side effects of dry mouth. It is vital to detect, diagnose, and treat xerostomia as early as possible to avoid the devastating effects of dry mouth on dental and overall health.

Text 2: Questions 15-22

15 Xerostomia may lead to;

- A. Malnutrition
- B .Difficulty in swallowing
- C. Difficulty in speaking D.
- All of the above

16 Xerostomia is found in;

- A .Women
- B .Men
- C. Children
- D .Women and Men

17 Which one of these can be the cause of Dry Mouth?

- A. Antihistamine and Antidepressants.
- B .Blood pressure medications and non-steroidals.
- C .Anti-inflammatory drugs.
- D. B & C

18 Dry mouth occurs due to;

- A. An injury to the salivary glands or the blocking of the salivary ducts.
- B .Pregnancy in women.
- C .Chronic conditions of other neck related diseases.
- D. None

19 Dryness of mouth may lead to;

- A. Difficulty in swallowing.
- B. Difficulty in swallowing and speaking.
- C .Chapped lips or cracked lips.
- D. Sore throat

20 A white tongue is most commonly a symptom of;

- A Diabetes
- B Fungal infections.
- C HIV
- D Addison`s disease

21 Effects of oral dryness include;

- A. Burning tongue
- B. Burning throat C.
- Ulcers and Sores D.
- All of the above

22 According to the information above, a dentist will focus more on;

- A .Assessing the stimulated or unstimulated salivary flow.
- B. Inspection of the tongue and the oral tissues.
- C .A & B
- D. None