

**Metropolitan University**  
Department of Computer Science and Engineering  
Final Examination, Summer 2020  
**Programme:** CSE, **Batch:** 49, 50 & 51  
**Course:** GED 115: English Language 2

Time: 3.5 hours (3 hrs 30 mins)

Marks: 40

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**Read the passage and answer questions 1 and 2.**

### **The Fight Against Polio**

The poliovirus is usually spread by just dirty fingers and in most cases is confined to the gut. As the virus travels down the intestine, it induces the body to produce antibodies against it, which will protect the person against future attacks. In about one per cent of cases, the virus floods into the bloodstream and infects the nerve cells in the spinal cord that drive the muscles. This causes the characteristic paralysis, which can affect one or more limbs and/or the muscles of respiration, in which case artificial ventilation, for example with the iron lung, may be needed to keep the patient breathing and alive. The iron lung, which was officially known as a negative pressure ventilator, was invented hundreds of years ago, but was further developed in the 1930's to help with the world polio outbreaks. At one point, the need for iron lungs was so high that they were used with a patient within an hour of their manufacture.

Polio originally caused sporadic clusters of paralysis, especially in children. For some reason, this pattern changed during the late nineteenth century into explosive epidemics, which swept through many countries each summer. The first major outbreak, on the East Coast of the USA in the summer of 1916, caused 25,000 cases of paralysis and 6,000 deaths.

Two rival strategies were used to develop vaccines to protect against polio. Jonas Salk (1914–1998) favoured an ‘inactivated polio vaccine’ (IPV), in which wild polioviruses are ‘killed’ with formalin, so that they can no longer replicate and spread into the spinal cord. IPV is injected into a muscle and causes protective antibodies to appear in the bloodstream.

The ‘oral polio vaccine’ (OPV) developed by Albert Sabin (1906–1993) relies on the fact that polioviruses forced to grow under unfavourable

conditions in the laboratory will undergo mutation into forms that can no longer invade the spinal cord. The OPV virus is still 'alive' and able to replicate, but cannot enter the spinal cord and cause paralysis. OPV is taken by mouth and, like a wild poliovirus, induces immunity against itself in the gut wall as it travels through the intestine. It therefore provides a different type of immunity protection when compared with the Salk vaccine.

Numbers of paralytic cases and deaths from polio fell dramatically in the USA over the next few years, and Salk's vaccine was taken up across the world. Sabin's OPV, being cheaper, more effective and easier to give, later superseded the Salk vaccine. Given correctly, both vaccines protect against polio and are overwhelmingly safe. There is an exceedingly low risk (one in 500,000 vaccinations) of Sabin's OPV reverting to a paralysing variant, a drawback that Sabin always refused to acknowledge.

**1. Answer the following questions: (1.5x4 = 6)**

- a) How does the poliovirus cause paralysis?
- b) In which season would polio epidemics break out in different countries during the late 19th century?
- c) How did Jonas Salk's vaccine prevent polio viruses from replicating and entering the spinal cord?
- d) Why was Sabin's OPV favoured over the Salk vaccine later on?

**2. On your answer script, write: (1x5 = 5)**

**TRUE** if the statement agrees with the information

**FALSE** if the statement contradicts the information

**NOT GIVEN** if there is no information on this

- a) Apart from a small proportion of cases, the poliovirus generally does not spread into the bloodstream.
- b) The iron lung was invented in the 1930s
- c) The OPV virus cannot multiply or reproduce.
- d) Both IPV and OPV were administered orally.
- e) Sabin refused to acknowledge that Salk's vaccine was also effective in preventing polio.

**3. Translate the following passage into English. (06)**

বাংলাদেশের প্রায় প্রতিবছরই প্রাকৃতিক দুর্যোগ ঘটে থাকে। এসব দুর্যোগের মধ্যে বন্যা অন্যতম। বন্যার কারণে ক্ষেতের ফসল, ঘরবাড়ি, গবাদি পশু, মাছের খামার, ইত্যাদি ব্যাপকভাবে ক্ষতিগ্রস্ত হয়। প্রায় প্রতি বছর আমাদের দেশে সাধারণত শতকরা ২০ ভাগ এলাকা বন্যার পানিতে প্লাবিত হয়। বন্যা পরিস্থিতি অস্বাভাবিক আকার ধারণ করলে দেশের ৬৮ ভাগ এলাকা ডুবে যাওয়ার আশঙ্কা থাকে। দরিদ্র জনগোষ্ঠীর অধিকাংশই দুর্যোগ ঝুঁকিপূর্ণ এলাকায় বসবাস করে বলে বন্যার প্রথম শিকার হয় তারা। (সূত্র: বাংলাদেশ ও বিশ্বপরিচয়, ৮ম শ্রেণি, NCTB)

**4. Fill in the gaps with appropriate phrases. (0.5x10 = 5)**

regardless of, by contrast, in reality, compared to, so to speak, as a matter of fact, either way, in other words, in addition to, consequently

- a) The government is strapped for cash. \_\_\_\_\_, private sectors have plenty of money to spend.
- b) \_\_\_\_\_ his performance, my performance wasn't good enough.
- c) You must treat them equally, \_\_\_\_\_ their gender and backgrounds.
- d) They migrated to the Middle East to free themselves from the shackles of poverty, \_\_\_\_\_.
- e) You can get there by bus or by taxi, but \_\_\_\_\_ it'll take more than an hour.
- f) You can paint the house blue or white or green. \_\_\_\_\_, I have no preference for a colour.
- g) She didn't pay membership fee for 3 consecutive months and \_\_\_\_\_ lost her membership.
- h) They make it look so easy in the movie, but \_\_\_\_\_ it's almost impossible.
- i) He took my watch without permission, \_\_\_\_\_ he stole it.
- j) You'll get two yearly bonuses \_\_\_\_\_ your salary.

**5. Make one sentence with each of the following idioms. (06)**

Up in the air

Bridge the gap

Look the other way

Pull one's weight

Think better of (doing) something

Clean up one's act

**6. Essay any ONE. Write at least 250 words. (12)**

a) Some people say that smoking (or tobacco) should be banned like narcotics and other illegal drugs. However, others see smoking as a matter of personal choice, and that government can at most discourage it but should not legislate against it. Discuss both views and give your opinion.

b) Some people are concerned that industrial automation and increasing use of Artificial Intelligence may cause unemployment all over the world. Is this a valid concern? Discuss the issue and give your opinion.