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Daffodil International University
Faculty of Science & Information Technology
Department of Software Engineering
Midterm Examination, Summer 2026
Course Code: ENG-101; Course Title: English-I
Sections & Teachers: MA, JC, JR, MS (A-N)
Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

Read the following passage carefully and answer the questions that follow.

The Development of Plastics

When rubber was first commercially produced in Europe during the nineteenth century, it rapidly became a very important commodity, particularly in the fields of transportation and electricity. However, during the twentieth century a number of new synthetic materials, called plastics, superseded natural rubber in all but a few applications. Rubber is a polymer – a compound containing large molecules that are formed by the bonding of many smaller, simpler units, repeated over and over again. The same bonding principle – polymerisation – underlies the creation of a huge range of plastics by the chemical industry.

The first plastic was developed as a result of a competition in the USA. In the 1860s, $10,000 was offered to anybody who could replace ivory – supplies of which were declining – with something equally good as a material for making billiard balls. The prize was won by John Wesley Hyatt with a material called celluloid. Celluloid was made by dissolving cellulose, a carbohydrate derived from plants, in a solution of camphor dissolved in ethanol. This new material rapidly found uses in the manufacture of products such as knife handles, detachable collars and cuffs, spectacle frames and photographic film. Without celluloid, the film industry could never have got off the ground at the end of the 19th century.

Celluloid can be repeatedly softened and reshaped by heat and is known as a thermoplastic. In 1907 Leo Baekeland, a Belgian chemist working in the USA invented a different kind of plastic by causing phenol and formaldehyde to react together. Baekeland called the material Bakelite, and it was the first of the thermosets – plastics that can be cast and moulded while hot but cannot be softened by heat and reshaped once they have set. Bakelite was a good insulator and was resistant to water, acids and moderate heat. With these properties, it was soon being used in the manufacture of switches, household items, such as knife handles, and electrical components for cars.

Soon chemists began looking for other small molecules that could be strung together to make polymers. In the 1930s, British chemists discovered that the gas ethylene would polymerise under heat and pressure to form a thermoplastic they called polythene. Polypropylene followed in the 1950s. Both were used to make bottles, pipes and plastic bags. A small change in the starting material – replacing a hydrogen atom in ethylene with a chlorine atom – produced PVC (polyvinyl chloride), a hard, fireproof plastic suitable for drains and gutters. And by adding certain chemicals, a soft form of PVC could be produced, suitable as a substitute for rubber in items such as waterproof clothing. A closely related plastic was Teflon, as PTFE (polytetrafluoroethylene). This had a very low coefficient of friction, making it ideal for bearings, rollers, and non-stick frying pans. Polystyrene, developed during the 1930s in Germany, was a clear, glass-like material, used in food containers, domestic appliances and toys. Expanded polystyrene – a white, rigid foam – was widely used in packaging and insulation. Polyurethanes also developed in Germany, found uses as adhesives, coatings, and – in the form of rigid foams – as insulatio materials. They are all produced from chemicals derived from crude oil, which contains exactly the same element

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		(ii). PVC could serve as a replacement for rubber without needing any further chemical additives. (iii) The earliest application of nylon was in the manufacture of parachutes for American military personnel during the first world war.. (iv) An eminent German chemist was credited with producing the superior form of nylon fibre.		
2.	a)	Write the correct form of the verb in the brackets to complete the following sentences. i. If all goes well, by December 2026, I will (finish) my university degree. ii. She didn't (not visit) her grandparents last weekend. iii. My parents walk (walk) in the park everyday in the morning. iv. At 1 a.m. yesterday, we were watching (watch) a football match. v. We had lived (live) in Dhaka for ten years. Now, we live in Sylhet.	[5x1=5]	CLO- 1 *Level- C1*
	b)	**Identify** an appropriate article (a/an/the/put cross for no article) to fill in the blanks. Last weekend, I decided to spend a day exploring (i) the historical areas of my city. In the morning, I visited (ii) the museum that is famous for its rare collections and unique architecture. It is considered an important cultural landmark by both locals and tourists. At the entrance, I met (iii) an elderly guide who offered me (iv) a detailed explanation of the exhibits. As I walked through the galleries, I saw (v) ∧ paintings from different periods and learned about (vii) the evolution of art over centuries. Later, I moved towards (viii) the riverbank, where people were enjoying (xiii) the fresh air and scenic beauty. I noticed (ix) a young artist sketching a portrait of a child sitting nearby. In the afternoon, I had lunch at a nearby restaurant, which served delicious traditional dishes. By the end of the day, I felt that it had been (x) an enriching experience that deepened my appreciation for history and culture.	[0.5x10=5]	
3.		**Construct** a paragraph based on any one of the following topics. (i) An embarrassing yet funny incident in your life. (ii) Saint-Martin's Island.	[1x8=8]	CLO- 4 *Level- C3*

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– carbon and hydrogen – as many plastics.

The first of the man-made fibres, nylon, was also created in the 1930s. Its inventor was a chemist called Wallace Carothers, who worked for the Du Pont company in the USA. He found that under the right conditions, two chemicals – hexamethylenediamine and adipic acid — would form a polymer that could be pumped out through holes and then stretched to form long glossy threads that could be woven like silk. Its first use was to make parachutes for the US armed forces in World War II. In the post-war years, nylon completely replaced silk in the manufacture of stockings. Subsequently, many other synthetic fibres joined nylon, including Orion, Acrilan and Terylene. Today most garments are made of a blend of natural fibres, such as cotton and wool, and man-made fibres that make fabrics easier to look after.

The great strength of the plastic is its indestructibility. However, this quality is also something of a drawback: beaches all over the world, even on the remotest islands, are littered with plastic bottles that nothing can destroy. Nor is it very easy to recycle plastics, as different types of plastic are often used in the same items and call for different treatments. Plastics can be made biodegradable by incorporating into their structure a material such as starch, which is attacked by bacteria and causes the plastic to fall apart. Other materials can be incorporated that gradually decay in sunlight – although bottles made of such materials have to be stored in the dark, to ensure that they do not disintegrate before they have been used.

1.	*a)*	**Select** the correct information from the passage to complete the flowchart below. Don't write **MORE THAN TWO WORDS** for each answer. **Evolution of Plastics and Synthetic Fibres** Declining supplies of ivory prompted a search for an alternative material for billiard balls *Hyatt produced* (i) _____, which enabled the early film industry to develop ↓ Because it could be softened and reshaped repeatedly, it was classified as a (ii) _____ ↓ Backeland subsequently developed the first (iii) _____, which could not be reshaped after setting ↓ Thanks to its insulating properties, Bakelite became widely used in household products like (iv) _____ ↓ In the 1930s, British scientists found that (v) _____ could be transformed into polythene under conditions of heat and pressure ↓ For packaging and insulating purposes, a foam named (vi) _____ was used.	[6x0.5=3]	*CLO-3* *Level-C4*
	b)	**Classify** the following statements as True/False/Not Given based on your reading of the passage. (i) Polythene and polypropylene, both could be utilised in the production of piping, bags, and bottles.	[4x1=4]	

celluloid
thermoplastic
thermosets-plastics
knife handles
gas ethylene
Expanded polystyrene