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**Question Paper Code : 20676**

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

First Semester

Civil Engineering

HS 6151 — TECHNICAL ENGLISH — I

(Common to All branches)

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Choose the correct word from the options that can be used for the meaning given : (4 × ½ = 2)  
[parallel, lucrative, mass production, instrument, habitat, instant]  
(a) Natural home —  
(b) Makes lots of money —  
(c) Made in large quantities —  
(d) Going side by side —
2. Fill in the blanks with the appropriate form of the underlined word: (4 × ½ = 2)  
(a) Metals absorb ————. They are heated to make them liquids.  
(b) Crimes against women are increasing. Many ———— cases are pending in the courts.  
(c) The teacher instructed the students to follow the rules in the laboratory. The students followed the ————.  
(d) The black clouds filled the sky and the runway was not ————. There was poor visibility.

3. Form correct compound words from the list of words given and fill in the blanks : (4 × ½ = 2)  
 [Store, vapour, heavy, solar, room, water, industry, energy]
- (a) The \_\_\_\_\_ filled the jar when the saline water was heated.  
 (b) Iron and steel plant is a \_\_\_\_\_.  
 (c) The arms were kept in the \_\_\_\_\_.  
 (d) \_\_\_\_\_ is a green form of energy.
4. Write a single line definition for any TWO of the following terms : (2 × 1 = 2)
- (a) Microscope  
 (b) Hard disk  
 (c) a satellite  
 (d) a bag pipe
5. Fill in the blanks with the suitable tense forms of the given verbs in the bracket : (4 × ½ = 2)  
 An eclipse of the Sun \_\_\_\_\_ (happen) when the New Moon \_\_\_\_\_ (move) between the Sun and Earth, blocking out the Sun's rays and casting a shadow on parts of Earth. On August 21<sup>st</sup> people \_\_\_\_\_ (watch) a solar eclipse when it \_\_\_\_\_ (cross) the USA.
6. Choose the correct verb form that agrees with the subject : (4 × ½ = 2)
- (a) Researchers \_\_\_\_\_ (have/has) designed new "smart" solar sunglasses incorporating semi-transparent organic solar cells that \_\_\_\_\_ (generates / generate) electric power enough to operate devices such as hearing aids.  
 (b) The solar cells \_\_\_\_\_ (is /are) very exciting devices. The invention \_\_\_\_\_ (paves/ pave) the way for other future applications
7. Rewrite the following conversation in the Reported Speech : (2 × 1 = 2)  
 Ravi: - Have you registered for the essay competition?  
 Babu: Yes, I registered yesterday.
8. Fill in the blanks with the correct words given in brackets and complete the sentences : (4 × ½ = 2)  
 (driving, currently, dissolved, effectively)  
 Water desalination processes separate \_\_\_\_\_ salts and other minerals from water. Membrane separation requires \_\_\_\_\_ forces including pressure which \_\_\_\_\_ force water through 'membrane' processes. Numerous membrane filtration seawater desalination plants are \_\_\_\_\_ under construction or in the planning stages up and down

9. Fill in with the correct prepositions taken from the option given in brackets and complete the sentences : (4 × ½ = 2)

It's estimated that \_\_\_\_\_ (in / for) the next five years, there will be 50 smart devices \_\_\_\_\_ (in / at) the hands of the people. Using more internet-connected products will increase the need \_\_\_\_\_ (for / of) constant upgrades to keep pace \_\_\_\_\_ (with / from) technology.

10. Frame 'Wh' questions for the responses given : (4 × ½ = 2)

- (a) Terry Fox was a Canadian athlete. (Who)  
(b) His one leg had to be amputated because of bone cancer. (Why)  
(c) He ran 5300 km in order to raise funds for cancer research. (What)  
(d) The Terry Fox Run for cancer research was held in the city of Chennai on August 21. (When)

PART B — (5 × 16 = 80 marks)

11. Answer both (a) and (b)

- (a) Read the following passage and answer the questions given below :

Water is vital for our existence. Not only do we drink it for survival, the majority of the human body is also composed of water. The earth's weather patterns are closely linked to water too, as they are determined by the complex patterns of changes and movement of water in the atmosphere. Since the ocean covers 70% of the earth's surface, it plays a major role determining what happens in the environment. One of its most important roles is distributing the heat around the world; it soaks up energy in the form of heat, and releases it more evenly across the earth.

**Water and Temperature**

Since the ocean is so effective at absorbing heat, the first few meters of the ocean's surface hold as much heat as the earth's entire atmosphere. But how does water control the earth's weather? First, it's important to know that the temperature of the water in the ocean and its salt content affect the water's density. So the saltier or the colder the water, the denser it is. Denser water sinks to the bottom of the ocean, while less dense water floats at the surface. The temperature of water is closely related to ocean currents, since the former affects the latter.

**Ocean Currents**

Simply put, ice triggers the movement of ocean currents. As water freezes in the North and South Poles, the water surrounding the ice becomes saltier and colder, since the salt leaves the water upon freezing. The ice then cools the water surrounding it. The cold, salty water then sinks due to its increased density. Once it gets to the bottom of the ocean floor, it has to move somewhere, so it travels horizontally to spread out over the surface of the earth. This is cold current. Warm water replaces it on the surface and moves to the North. This motion is called the global conveyor belt. The global conveyor belt is a global-wide current that circulates cold

and warm water around the earth. So, the warm water that replaces the cold on the surface travels northward, increasing the temperature of the Atlantic Ocean. That's why countries that border the Atlantic Ocean are relatively warmer than landlocked countries during the wintertime.

However, the cold water doesn't always stay at the bottom of the ocean. Instead, it comes up at different places around the globe called upwelling. Since the ocean floor contains many nutrients important for survival, the cold water that rises to the surface brings these nutrients with it, attracting all forms of life. Usually every level of the food chain is present at these upwellings, making them great spots for fishing. In fact, upwellings are common in areas where winds blow water away from the surface. In coastal areas, sometimes winds (called longshore winds) blow perpendicular to the land over the ocean, pushing the warm water away from the coast. This allows the cold water at the bottom to rise up and replace the warmer water. Therefore, some coastal areas are effective places to fish due to the upwelling that attracts more fish to the area.

### **The Global Conveyor Belt**

As previously mentioned, the global conveyor belt describes the current that runs throughout the earth's waters, driven by the cold waters at the poles. The "belt" starts in the North Atlantic Ocean, where the cold water that surrounds the ice sinks, and starts to flow around the world. A current is created as warm water rushes to the surface to replace the sinking cold water: The cold, dense water moves southward in between the continents toward South America and Africa— and as it passes the equator, the water warms. As the water passes Antarctica, it is recooled by the ice near the South Pole. It continues to move on from there and splits into two paths: one that veers off toward the Indian Ocean, and the other toward the Pacific Ocean. These two paths gradually warm up as they travel northward, causing them to rise to the surface (which, as we know, is called an upwelling). The currents eventually return to the North Atlantic, where the journey begins again. Although the path of the global conveyor belt can be quickly explained, the actual travel time occurs very slowly – the waters travel at slow speeds when compared to tidal currents.

### **Ocean Currents and Climate**

The effect that ocean currents have on the earth's climate is still being studied by scientists around the world, but we know a few things for sure. The ocean plays a huge role in redistributing heat around the globe, like we previously explained. However, there are certain ocean currents, like the Gulf Stream (which is part of the global conveyor belt) that have a direct effect on the climates of countries they pass. The Gulf Stream travels past the Caribbean and Florida, carrying warm water, then turns off to the right toward Europe – specifically England and Ireland. That's why the northeastern part of the United States and Canada has a cooler climate; the Gulf Stream doesn't bring warm water to its shores, causing colder temperatures. And since the direction of currents is always affected by wind direction (like we previously described with upwellings), climate is indirectly affected by wind as well.

## Global Warming

Scientific evidence has shown that the earth has warmed since 1880. Global warming is caused mainly by an increase in carbon dioxide levels in the atmosphere. The increased temperatures have caused many of the ice caps in the North and South Poles to melt, disrupting the global conveyor belt. Even though the phenomenon is called "global warming," it is more accurately described as climate change – if the ice caps melt, there will be less dense water to move around the globe. And if there's less dense (and therefore cold) water to circulate around the earth, the Gulf Stream will be slowed down. This will result in a cooling of the Caribbean and Western Europe. Thus, global warming can in fact result in colder temperatures in some areas.

Choose the correct option for the following questions from the choices given : (8 × 1 = 8)

- (i) Cold water rises from the bottom of the ocean to the surface of the ocean at different places around the globe. What is this process called?
- (1) global warming
  - (2) climate change
  - (3) upwelling
  - (4) cold water current
- (ii) How does the author describe the global conveyor belt?
- (1) the cooling of the Caribbean and Western Europe
  - (2) the role the ocean plays in redistributing heat around the globe
  - (3) a globe-wide current that circulates cold and warm water around the earth
  - (4) cold water rising from the bottom of the ocean to the surface of the ocean at different places around the globe
- (iii) Ocean currents have an effect on the earth's climate. What evidence from the passage supports this conclusion?
- (1) Some ocean currents, like the Gulf Stream, have a direct effect on the climates of the countries they pass
  - (2) The gradual increase of the earth's temperature has been a topic of much debate
  - (3) Cold water does not always stay at the bottom of the ocean
  - (4) As water freezes in the North and South Poles, the water surrounding the ice becomes saltier and colder

- (iv) Based on the passage, why is the global conveyor belt important?
- (1) It helps the ocean absorb heat from the countries which it surrounds
  - (2) It circulates the warm and cold water that regulate the temperature of the earth
  - (3) It helps the polar ice caps stay frozen. This ice triggers the movement of ocean currents
  - (4) It is the cause of upwellings that provide nutrients to various forms of life in the ocean

- (v) What is this passage mostly about?
- (1) the effects of global warming on the future of the planet
  - (2) the human need to stay hydrated
  - (3) the excellent fishing on the Gulf Stream
  - (4) the role of the ocean's currents in maintaining the earth's temperature

- (vi) Read the following sentences from the passage: "Water is vital for our existence. Not only do we drink it for survival, the majority of the human body is also composed of water."

As used in the passage, what does the word "vital" mean?

- (1) unimportant
- (2) essential
- (3) additional
- (4) minor

- (vii) Choose the answer that best completes the sentence below.

When ice freezes, the water around it becomes saltier and colder. \_\_\_\_\_, its density increases.

- (1) Therefore
- (2) On the other hand
- (3) In contrast
- (4) Especially

- (viii) Which of the following statements is false?

- (1) One of the reasons for increase of temperature is due to CO<sub>2</sub> in atmosphere
- (2) Melting of ice has not disrupted the movement of global conveyor belt
- (3) The other name of global warming is climate change
- (4) Global warming may result in colder temperature in some areas

- (b) The following is an interview with A leading researcher and futurist, Lester Brown, looks at soil, oil, water, population, and the state — and fate? — of planet Earth. Read the following interview carefully and answer the questions.

**Interviewer:** How do you see the future of mother earth relating to fossil fuel?

**Lester Brown:** The future is very difficult to project now, because the rate at which things are changing is unprecedented — and those changes are a product of our advancing technology and our increasing population. For example, most of the fossil fuel that's ever been consumed has been used in *my* lifetime — indeed, most of it in the last 35 years. This enormous combustion of fossil fuel is literally altering the earth's chemistry. We see it in the level of atmospheric carbon dioxide, which restricts the amount of heat that's radiated out from the earth. We may be getting climate changes as a result.

We're also beginning to realize that the burning of fossil fuels, particularly coal and to a lesser degree oil, results in the production of sulphur dioxide and various nitrogen oxides. These, in turn, contribute to acid rain or — more broadly — air pollution.

**Interviewer:** What destruction will be caused due to acid rain?

**Lester Brown:** And acid rain is starting to destroy forests all over the world. There are areas in West Germany that until recently were covered with trees. Now they look like scenes out of World War III. We can see the first symptoms in this country now, too. The rate of annual forest growth in Virginia, according to a recent study, has declined some 20% over the past generation.

Acid rain also affects the earth's chemistry by releasing the aluminum that's trapped in the soil. This results in more of the metal getting into the water supply and into foodstuffs.

**Interviewer:** How about the population explosion?

**Lester Brown :** The other source of uncertainty is the effect of population growth on natural support systems. Within the last month, the 5 billionth living human arrived on earth. As recently as 1950, there were only half that many people. The effects of this enormous increase in human numbers are becoming evident in many parts of the Third World, but particularly in Africa.

On the African continent, grain production per person has declined by more than a fifth since 1967. But more serious than the decline itself is the fact that there isn't anything being done, in the form of either family planning or food production, to indicate that the decline is going to be reversed in the foreseeable future. In 1985, out of some 545 million Africans, 170 million were fed entirely on grain from abroad.

Answer the following questions in 2 sentences :

(4 × 2 = 8)

- (i) What is the result of burning fossil fuels?
- (ii) How does acid rain affect the earth?
- (iii) How are the trees affected because of acid rain?
- (iv) What two effects are felt in Africa?

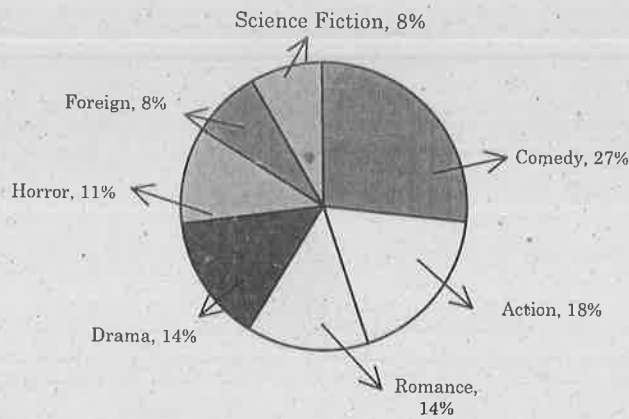
12. (a) Most of the rain water gets wasted. Write EIGHT recommendations by which rain water could be preserved for growing crops.

Or

- (b) *There is one death every four minutes due to a road accident in India.* Write eight instructions that the two wheeler riders should follow to avoid such accidents.

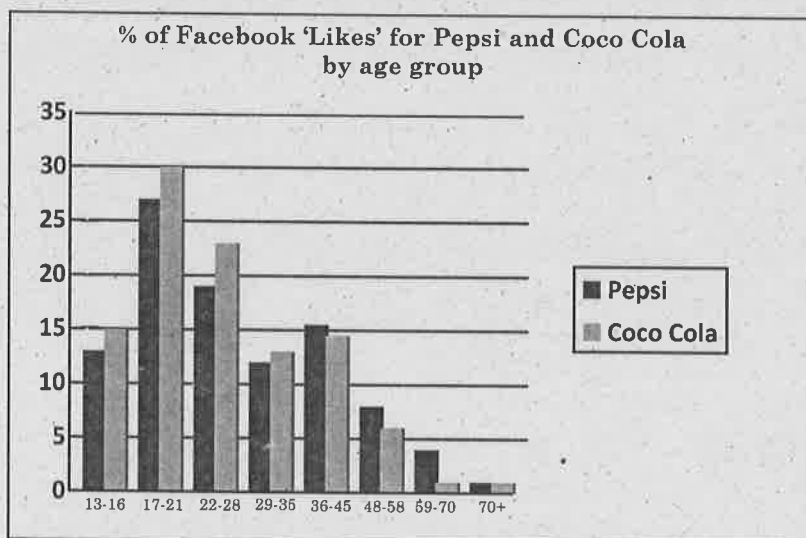


13. (a) The Pie chart gives the data of the Favourite Movie Genres among the youth. Read the pie chart, interpret the data and write a paragraph of 150 words.



Or

- (b) The bar chart represents the Percentage Facebook 'Likes' for Pepsi and Coco cola by people in various age groups. Read the chart, interpret and analyse the data and write a paragraph of 150 words.



14. (a) You took part in the orientation to the first semester students conducted by your college. Write a letter to your friend about the experience and how it was motivating and encouraging to you for being a student of engineering course.

Or

- (b) As an NSS volunteer you took part in the Blood Donation Programme. Write a letter to the Programme coordinator about the success of the programme.

15. (a) The mobile phone has a great impact on the young generation. Write an essay of 250 words analysing the positive and negative impact of it on the youth. Give suggestions how to make mobile phones more productive and useful for learning to the young generation.

Or

- (b) Write an essay of 250 words on the following topic "The influence of music to the influence of books" comparing the influence of music to the influence of books on the youth.
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