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**Question Paper Code : 80195**

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Second Semester

HS 8251 – TECHNICAL ENGLISH

(Common to All Branches (Except Marine Engineering))

(Regulation 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Match the words in column A with the meanings in column B : (4 × ½ = 2)

A

B

- |                 |                             |
|-----------------|-----------------------------|
| (a) incorporate | (i) introducing new         |
| (b) innovative  | (ii) abundantly filled with |
| (c) teeming     | (iii) illegally enter       |
| (d) trespass    | (iv) include                |

2. Define any TWO of the following terms : (2 × 1 = 2)

- (a) a crane
- (b) firewall
- (c) accelerator
- (d) mercury

3. Expand the Compound Nouns : (4 × ½ = 2)

- (a) solar radiation
- (b) rural project
- (c) metal detector
- (d) community garden

4. Choose the verb that agrees with the subject of the sentence :  $(4 \times \frac{1}{2} = 2)$
- Hundred dollars \_\_\_\_\_ (is / are) a big amount of money.
  - The President, along with his assistants \_\_\_\_\_ (are / is) attending the programme.
  - One of the satellites \_\_\_\_\_ (have / has) stopped sending signals.
  - Our AC as well as our refrigerator \_\_\_\_\_ (has / have) developed problems in summer.
5. Change the sentences into the passive form (Impersonal) :  $(2 \times 1 = 2)$
- They have deployed several policemen in the train station for security reasons.
  - We planted many trees in our city after the cyclone.
6. Convert the following into numerical adjectives :  $(4 \times \frac{1}{2} = 2)$
- a building that is hundred years old
  - a pole that is ten metres long
  - a bottle with the capacity of 500 millilitres
  - a retreat that would last for ten days
7. Complete the sentences with the correct 'If Clauses' :  $(2 \times 1 = 2)$
- If more satellites are sent into the space, it \_\_\_\_\_ (lead) to huge space junk.
  - If the driver had been careful, he \_\_\_\_\_ (avoid) the collision.
8. Change the following into the reported speech :  $(2 \times 1 = 2)$
- Teacher : Tharun, Have you designed the new machine?  
 Tharun : Yes, sir. I shall show you tomorrow.
9. Write a check list of four items that a building authority Should take care to avoid fire accidents :  $(4 \times \frac{1}{2} = 2)$
10. Embed a suitable clause in the blank given and complete the sentences :  $(4 \times \frac{1}{2} = 2)$
- The boy, \_\_\_\_\_ is my brother.
  - The machine, \_\_\_\_\_ is from Germany.
  - The airplane, \_\_\_\_\_ is from Malaysia.
  - The ship, \_\_\_\_\_ is a cargo ship.

11. Read the following passage and answer the questions given below :

We all know that technological progress is not an actual magic show. Still, it almost seems like magic the way the transistor, the main component in all modern electronics, has diminished in size since being invented in 1947.

The first transistor, made of gold, plastic, and germanium (a metallic Crystal), was about the size of an adult's fingernail. Today's transistors, etched on silicon wafers, can't be seen with the naked eye. The minimum size of a transistor is now 45 nanometers. A nanometer is one-billionth of a meter—roughly the width of three or four atoms.

Computer engineers are trying to make transistors even smaller. How tiny can they go? Every transistor has the same basic properties: It can both Conduct and stop the flow of electricity. The word transistor is a combination of two words: transfer and resistor. All transistors are made from materials called semiconductors. A semiconductor is a cross between a good conductor (such as copper) and a good insulator (such as rubber). It can be made to accept or reject the flow of electrons in a circuit. Germanium, used in the first transistors, is a semiconductor. So is silicon, widely used today.

A transistor's ability to control the flow of electricity has made possible our entire computerized world. All computers depend on the binary system to convert electric signals into useful information. The binary system has only two numbers : 1 and 0. When a transistor allows electricity to flow through, it registers a 1. When the transistor stops the flow of electrons, it registers a 0. Millions or billions of those 1s and 0s, flashing off and on hundreds of millions of times a second in programmed patterns, enable your computer to do everything it does—A transistor that is only a few atoms wide is incredibly small. But researchers want to make transistors even smaller and cheaper to produce. Chip-making technology has run into a big problem, however. Transistors smaller than 45 nanometers and etched on silicon chips don't work very well. They tend to leak electrons, making them less efficient.

To get around that problem, scientists are using nanotechnology to look at new materials and new methods to produce transistors. Nanotechnology is the engineering of materials on the atomic level, building new materials from the bottom up by manipulating atoms and molecules.

One Promising area of nanotechnology is the use of graphene, a Carbon fabric that is only one carbon atom thick. Graphene is strong, stable, and can act as a semiconductor. If researchers can find a practical way to etch transistors onto graphene, smaller and immensely faster computer chips can be more cheaply made.

Another Promising area of nanotechnology research involves using strands of deoxyribonucleic acid (DNA) to build transistors. DNA is the genetic material that determines the makeup of all living cells. Researchers can now take strands of DNA from bacteria and manipulate them into almost any shape they want. California Institute of Technology researcher Paul Rothmund has helped pioneer that technique. Rothmund and others are looking to shape DNA strands into a kind of scaffolding that could be attached to silicon wafers to make transistors. Because DNA does not conduct electricity, scientists are experimenting with ways to combine DNA with atoms of conducting materials, such as gold, to build transistors. DNA replicates (copies) itself. So if researchers can produce a DNA transistor, all they have to do is add the right "soup" of chemicals, and the DNA would reproduce itself, making millions of new nano-sized transistors at little or no cost.

Making transistors much smaller and much more cheaply could transform our lives. Tiny, smart nanomachines could do any number of things quickly and invisibly. Their greatest use might be in medicine. Swallowed in a pill or injected, tiny, computerized "nanobots" might be able to repair damaged cells one at a time, restoring health invisibly and painlessly before destroying themselves.

The nanobots might repair pipes, bridges, airplane engines, and electrical equipment too. They might even help with housework. Kris Pister, a University of California physicist, envisions what he calls smart dust—nanobots that move around the house at night, eating dirt and generally cleaning up such things are possible in your lifetime—all because scientists are now "thinking small."

- (a) Choose the correct answer : (10 × 1 = 10)
- (i) When was the transistor invented?
- (1) 1947
  - (2) 1945
  - (3) 2007
  - (4) 2000
- (ii) How does the author describe the changes transistors have undergone over time?
- (1) Transistors are used for the same things they were used for when first invented
  - (2) Transistors haven't changed much since they were invented
  - (3) Transistors have shrunk in size and become less useful
  - (4) Transistors have shrunk in size but increased in usefulness
- (iii) How do you think the author feels about the future of transistors and nanotechnology?
- (1) hopeful and excited
  - (2) concerned and worried
  - (3) cautious and uncertain
  - (4) to little information to determine

- (iv) Which of the following was not found in the first transistor?
- (1) Plastic
  - (2) Gold
  - (3) Silicon
  - (4) Germanium
- (v) The semiconductor used in modern transistor is
- (1) Silicon
  - (2) Germanium
  - (3) Plastic
  - (4) Graphene
- (vi) What is the advantage of using graphene in Transistor is \_\_\_\_\_
- (1) It is a good chemical
  - (2) It can act as semiconductor
  - (3) It conducts electricity
  - (4) It is shining
- (vii) What will be the function of DNA strands?
- (1) They are strong
  - (2) Help to conduct electricity
  - (3) Act as a kind of scaffolding and be attached to silicon
  - (4) They are very cheap
- (viii) Read the following sentences and answer the question below :
- “Ladies and gentlemen, boys and girls, consider the amazing shrinking transistor! Watch it contract a million times until it becomes a tiny dot visible only under a powerful microscope!” What does the word **contract** mean?
- (1) agreement or pact
  - (2) form an agreement
  - (3) shrink
  - (4) to get or incur, as in a virus or disease

(ix) This passage is mostly about

- (1) technology
- (2) nanotechnology
- (3) transistors
- (4) science

(x) The question below is an incomplete sentence. Choose the word that best completes the sentence.

If scientists can figure out how to etch transistors onto graphene, \_\_\_\_\_ they will be able to create much smaller and much faster computer chips.

- (1) but
- (2) then
- (3) so
- (4) however

(b) Fill in the blanks with the correct words taken from the passage :

(6 × 1 = 6)

- (i) Electric signals are converted into useful information through \_\_\_\_\_.
- (ii) Transistors smaller than 45 nanometers do not work very well because \_\_\_\_\_.
- (iii) Graphene is one of the forms of \_\_\_\_\_.
- (iv) Tiny nanobots may be used to repair \_\_\_\_\_ in medicine.
- (v) Nanobots can be used in houses to \_\_\_\_\_.
- (vi) The transistor from the size of a fingernail has become \_\_\_\_\_.

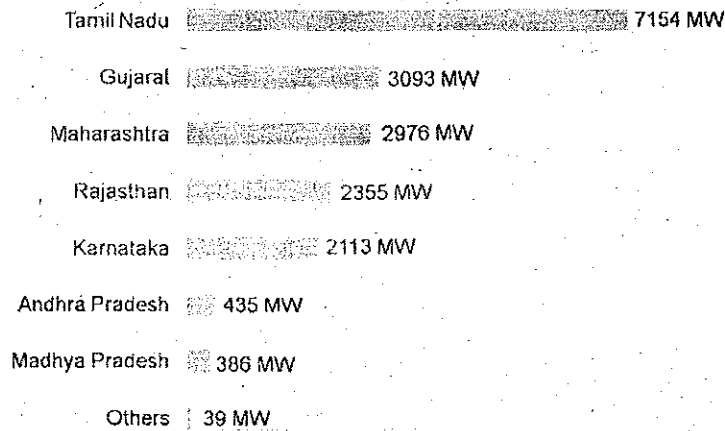
12. (a) Your friend is going to take part in an intercollegiate sports tournament. Write Eight instructions that has to be given to your friend before he/she leaves. (16)

Or

(b) Assume your sister is preparing for NEET exam. What recommendations would you offer with regard to preparation for the examination? Write Eight recommendations. (16)

13. (a) Read the following chart, and describe it. Interpret and analyse the data in two paragraphs. (16)

State wise wind energy capacity in India by Feb 2013 (In MW)



Or

- (b) Do you think the linking of rivers in India will help to solve water crisis in the country? Analyse the question and write an essay in two paragraphs. In around 200 words. (16)
14. (a) Read the following advertisement in the Hindu and apply to one of the posts. Write a Cover letter and a detailed CV. (16)

### Software Engineers / Computer Technologists Required

We currently have vacancies for self-driven, passionate and results focused Senior Software Engineer and Technologists to be part of our specialist team that will be dedicated to designing, developing and implementing an exciting code generation project. You will have to work in an agile environment, collaborating with highly skilled people who are proactive, passionate about technology and results driven.

*Coupled with your technical ability, you will possess strong communication skills both written and verbal, with the ability to engage with both internal and external stakeholders. Strong technical leadership and negotiation skills are essential.*

Mail your CVs along with a cover letter to : [hr@orbis.in](mailto:hr@orbis.in)

**HR Manager**

**Orbis Systems**

PO Box 4935

Chennai – 3

Or

(b) **Junior Engineers are wanted for the Metro Rail Project in Chennai**

**Job Requirements : B.E/B.Tech in any Engineering**

**Good Communication and Interpersonal Skills**

**Able to work in team**

**Should be creative and Resourceful**

**Send your CVs along with the cover letter to**

**The Director**

**Recruitment Sector**

**(Advt : The Hindu  
dated 9<sup>th</sup> April 2018)**

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15. (a) You are working for a chemical industry. On a particular day, some acids stored in a container spilt down and some workers got burn injuries. They were rushed to the hospital and were given treatment. Two workers had major burns and were treated as inpatients whereas the others were discharged. Write a report to the Managing Director of the company about the cause of the accident, your findings and your recommendations to avoid such incidents in future. (16)

Or

- (b) After a survey conducted among the youth about their favourite movie genre, the following data is obtained. Write a report and interpret the data in 250 words : (16)

Percentage of youth who selected their favourite movie genre

