

Reg. No. :

Question Paper Code : 11443

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2012.

Second Semester

Mechanical Engineering

HS 2161/186202/HS 21/080020003 — TECHNICAL ENGLISH — II

(Common to all branches)

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Match the words in column A with their meanings in column B : (4 × $\frac{1}{2}$ = 2)
- | A | B |
|--------------|-----------------------------|
| (a) disposal | (i) resulting in death |
| (b) inedible | (ii) not moving or changing |
| (c) fatal | (iii) getting rid of |
| (d) stagnant | (iv) unfit to eat |
2. Fill in the gaps in the following passage with suitable prepositions : (8 × $\frac{1}{4}$ = 2)
- The progress _____ the field _____ chemistry has resulted
_____ the development _____ all kinds _____ industries.
The applications _____ chemistry _____ the fields _____
medicine and biology are significant.
3. Write purpose statements for TWO of the following : (2 × 1 = 2)
- (a) an aerial (b) an experiment
(c) a litmus test.
4. Use any TWO of the following words in sentences of your own first as a noun
and then as a verb. (2 × 1 = 2)
- (a) Produce (b) Project
(c) Convict.
5. Fill in the blanks with suitable adverbs : (4 × $\frac{1}{2}$ = 2)
- (a) They walked _____ along the edge of the canal.
(b) This essay is _____ written.
(c) Your answer is _____ right.
(d) He speaks very _____.
6. Give the numerical expressions for the following : (4 × $\frac{1}{2}$ = 2)
- e.g. a course of fifteen days – a fifteen days course.
- (a) an auditorium with a capacity of 500 persons
(b) a distance of 44 kilometres
(c) a DC supply of 240 volts
(d) an expedition of two weeks.



115cm

7. Rewrite the following in reported speech : (2 × 1 = 2)
(a) Ram said, "I finished my exam yesterday".
(b) Ravi said to Raja, "Will you join me for a cup of coffee?"
8. Give an extended definition of a 'Computer' in four sentences. (4 × $\frac{1}{2}$ = 2)
9. Add a suitable Prefixes/suffixes to the following words to mean the words given against them : (4 × $\frac{1}{2}$ = 2)
(a) _____ proper : not proper
(b) _____ reliable: not reliable
(c) _____ pure: not pure.
(d) weapon _____ : without weapons.
10. Insert the articles 'a', 'an' and 'the' in the appropriate blanks : (4 × $\frac{1}{2}$ = 2)
Forests also play _____ vital role in regulating _____ flow of water through _____ ecosystem, which in turn helps determine _____ local and regional climate.

PART B — (5 × 16 = 80 marks)

11. Read the following passage and answer the questions given at the end :

An electron microscope is a sophisticated microscope that can magnify objects up to one million times their original size. Unlike a traditional microscope, an electron microscope can reveal some details of molecular structure and can be effectively used for chemical analysis. It has become an invaluable analytical tool, widely used in medical and industrial research establishments.

There are two used types of electron microscopes : the Transmission Electron Microscope (TEM) and the Scanning Electron Microscope. Transmission Electron Microscopes have extremely high resolution and can provide detailed information about the structure of organisms most of which are far too small to be seen at all with a normal optical microscope. TEMs can also be used for studying the arrangement of atoms and molecules in metal and other materials. In fact, they are effectively used, both to give information about the microstructure of new materials as they are being designed and also to help in the analysis of failures of materials. Most TEMs operate at accelerating voltages in the range of 50-100,000 V.

On the other hand, Scanning Electron Microscopes (SEM) have very different uses as they are very useful for looking at the surfaces of objects and can provide a completely different range of information. They may produce an extremely fine beam of electron, which is swept to-and fro across the specimen. They are extremely useful in studying the details and contours of different surfaces. They provide many other striking views of plant and animals cells that cannot be obtained by other means. In the microelectronics industry, Scanning Electron Microscopes have proved to be an equally great asset. It is possible to use them to look in detail at the microcircuits that are now constructed on tiny silicon chips, the microscope is also used as an instrument to fabricate circuits by using the electron beam as a 'writing' tool, controlling it by a computer so that the required circuit is produced on a special surface.

Questions :

(a) Answer the following questions :

- (i) What is the most remarkable feature of transmission electron microscope?
- (ii) Can TEM help in achieving improved diagnosis of ailments? How?
- (iii) What are the two important uses of electron microscopes in materials science?
- (iv) Can SEM aid cancer research? How?
- (v) Can electron microscopes accurately describe the nature of the material under examination?

(b) Read the following statements and mark True or False based on the text :

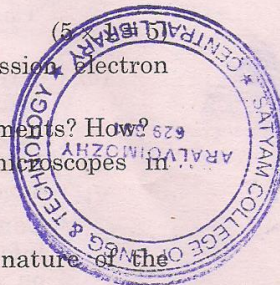
(5 × 1 = 5)

- (i) TEM has high resolving power.
- (ii) SEM cannot be used in the microelectronics industry.
- (iii) SEM can provide striking views of animal cells.
- (iv) In TEM the electron beam is scanned to-and-fro across a specimen.
- (v) Electron microscopes are more useful than optical microscopes.

(c) Answer the following questions by choosing the best alternative option under each :

(6 × 1 = 6)

- (i) Some of the finest details of molecular structure can be revealed by
 - (1) Traditional microscopes
 - (2) Optical microscopes
 - (3) Electron microscopes
- (ii) In fact, they are effectively used both to give information about the microstructure of new materials as they are being designed. What is being designed?
 - (1) Electron microscopes
 - (2) TEMs
 - (3) New materials
- (iii) TEMs allow us to see very fine details of specimens because
 - (1) electrons pass right through the specimens
 - (2) they have extremely high resolving power
 - (3) the electron beam is scanned to-and-fro the across the specimen
- (iv) TEMs can be used to
 - (1) study details and contours of different surfaces
 - (2) study the arrangement of atoms and molecules in metal
 - (3) look in detail at the microcircuits that are now constructed
- (v) SEMs are very good for
 - (1) looking at the surfaces of objects
 - (2) helping in the analysis of failure of materials
 - (3) providing detailed information about viruses
- (vi) SEMs can be used to look in detail at
 - (1) microcircuits that are now constructed on a tiny silicon chip
 - (2) the normal outer surfaces of cells
 - (3) both of these



12. (a) Write two paragraphs (200 words) on the following topic : (16)
"Compare and contrast the advantages and disadvantages of Internet".

Or

- (b) Write two paragraphs of the following. Each paragraph should not exceed 100 words : (16)
"Ways to preserve our environment".

13. (a) Draft a letter of job application in response to the following advertisement. (16)

Candidates holding a bachelor's/masters degree with a background in information systems marketing or communications are required for work on company intranet, extranet and Internet sites. Mastery of HTML coding, website design including graphic design and client server technology is vital. Applicants must also possess excellent writing skills and the ability to effectively manage multiple projects while interfacing with company employees.

Post your application and CV to Mr. Promod Tiwari, Human Resources Dept, Exclusive Software, North Main Street, Chennai – 67.

Or

- (b) Write a letter to the Editor of 'The Hindu', Chennai, complaining of noise pollution as there are many theatres, community halls with loudspeakers in your locality. Include your suggestions to solve the problems you have discussed in your letter. (16)

14. (a) Write a set of eight instructions to maintain domestic electrical gadgets like T.V. and Refrigerator in good condition. (16)

Or

- (b) Write a set of eight instructions to be observed "to avoid accidents while driving". (16)

15. (a) Given below is a set of jumbled sentences. Rewrite them in the right logical order : (16)

- (i) And unlike robots, people can know whether what they are doing is good or bad, and whether it is boring or interesting.
- (ii) Human beings can also walk, run, swim and so on, but robots are usually confined to one place.
- (iii) Another advantage human beings have is the way the same person can do jobs as different as making a cup of tea or designing a new machine.
- (iv) It is a known fact that robots have many advantages over human beings.
- (v) Taking into account all these factors, it should be remembered that robots owe their existence, to human beings.
- (vi) However, it is also true that humans can do many things that robots can't.
- (vii) For example, humans can carry out a task without having to be told exactly how to do it, they don't have to be programmed.
- (viii) Even if the robots are able to move, they can do so, only in a very limited way.

Or

- (b) Imagine that you have to go to Bangalore to attend an interview. Make an eight item checklist with a proper title for your reference. Write a check list containing eight items which will help you prepare for the interview. (16)