

**INDIAN MARITIME UNIVERSITY**  
(A Central University, Government of India)

June 2017 End Semester Examinations  
B. Tech (Marine Engineering – First Semester)

**Communicative English & Sociology – UG11T 2101/1101**

Date: 27.06.2017

Maximum Marks : 100

Time: 3 Hrs

Pass Marks : 50

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**PART – A**

(10X3=30 Marks)

(All questions are compulsory)

1. Answer the following questions in 60 to 70 words each -

- (a) What are the objectives of Trade Unions?
- (b) What is Authority?
- (c) What are the five needs of humans according to Maslow?
- (d) What is the difference between ethics, values and morals?
- (e) What is the meaning of 'social values'? Name two social values.
- (f) Write a note on the 'social contract theory' advocated by John Locke.
- (g) Differentiate between 'single party system' and 'multi-party system'.  
Give one example for each system.
- (h) What is the role of 'eye contact' in effective communication?
- (i) List two barriers that you will encounter while delivering an oral presentation. How will you eliminate these two barriers?
- (j) What is the importance of effective communication at workplace?

**PART – B**

(5X14=70 Marks)

(Answer any 5 of the following)

2. (a) Complete the following sentences using appropriate conjunctions.

- i) ----- he was not ready, we went without him.
- ii) I called him many times, ----- he did not answer my calls.
- iii) ----- she was angry, she said nothing.
- iv) ----- they arrived, I was working in the garage.

(b) Rewrite the following sentences correctly using suitable articles.

- i) I have idea.
- ii) Pyramids are in Egypt.
- iii) My mother is good cook.
- iv) Have you brought umbrella today?

(c) Rewrite the following sentences as directed.

- i) The tea was so hot that I could not drink it. (Change into a simple sentence)
- ii) He is too stupid to handle such a difficult situation. (Remove too)
- iii) John is the tallest boy in the class. (Use the comparative form of the adjective)
- iv) No sooner did I hear the gunshot than I rushed to the spot. (Rewrite using as soon as.)
- v) People grow a lot of rubber in Malaysia. (Change the voice)
- vi) "Shall I ask her to wait," said Pamela. (Change into Reported Speech)

3. An accident has occurred on board your ship due to "slip and fall". Assume that you are the Fourth Engineer on M.V.Parijat. Write a report on this accident to be sent to the Superintendent of your company.

4. Following are the agenda items for the sixth meeting of the Executive Committee of Vinayak Industries Pvt. Ltd., Mumbai.

- Welcome remarks
- Minutes of the last meeting
- Chairman's report
- Appointment of accountant
- Proposal for renovating Wing B
- Complaints regarding the quality of recently manufactured product
- Decide time and agenda for the next meeting

Assuming that you are the Secretary -

- (a) Write a NOTICE inviting the committee members to attend the meeting. Include the given agenda items in the notice.
- (b) Also, write the MINUTES of this meeting.

5. The Students' Welfare Committee of your college is going to organize a cultural fest. As the President of this committee, write a letter to the Administrative Head of your college requesting him to grant you certain facilities and infrastructure for the fest. In your letter, list out the requirements.
6. Read the following passage carefully and answer the questions that follow:

The need for solar electricity is clear. It is safe, ecologically sound, efficient, continuously available, and it has no moving parts. The basic problem with the use of solar photovoltaic devices is economics, but until recently very little progress has been made towards the development of low-cost photovoltaic devices. The larger part of research funding has been devoted to study of single-crystal silicon solar cells, despite the evidence, including that the leading manufacturers of crystalline silicon, that the technique holds little promise. The reason for this pattern is understandable and historical. Crystalline silicon is the active element in the very successful semiconductor industry and virtually all the solid state devices contain silicon transistors and diodes. Crystalline silicon, however, is particularly unsuitable to terrestrial solar cells.

Crystalline silicon solar cells work well and are successfully used in the space programme, where cost is not an issue. While single-crystal silicon has been proven in extraterrestrial use with efficiencies as high as 18 percent, and other more expensive and scarce material such as gallium arsenide can have even higher efficiencies, costs must be reduced by a factor of more than 100 to make them practical for commercial use. Besides the fact that the starting crystalline silicon is expensive, 95 percent of it is wasted and does not appear in the final device. Recently, there have been some imaginative attempts to make quality single crystals: but to date the efficiencies of these apparently lower-cost arrays have been unacceptably small. Moreover, these materials are cheaper only because of the introduction of disordering in crystalline semiconductors and disorder degrades the efficiency of crystalline solar cells.

The dilemma can be avoided by preparing completely disordered or amorphous materials. Amorphous materials have disordered atomic structure as compared to crystalline materials: that is, they have only short-range order rather than the long-range periodicity of crystals. The advantages of amorphous solar cells are impressive. Whereas crystals can be grown as wafers about four inches in diameter, amorphous materials can be grown over large areas in a single process. Whereas crystal-line silicon must be made 200 microns thick to absorb a sufficient amount of sunlight for efficient energy conversion, only 1 micron of the

proper amorphous materials is necessary. Crystalline silicon solar cells cost in excess of Rs. 4500 per square foot, but amorphous films can be created at a cost of about Rs. 2200 per square foot.

Although many scientists were aware of the very low cost of amorphous solar cells, they felt that they could never be manufactured with the efficiencies necessary to contribute significantly to the demand for electric power. This was based on a misconception about the feature which determines efficiency. For example, it is not the conductivity of the material in the dark which is relevant, but only the photoconductivity, that is, the conductivity in the presence of sunlight. Already, solar cells with efficiencies well above 6 percent have been developed using amorphous materials and further research will doubtless find even less costly amorphous material with higher efficiencies.

Questions (a) to (c) -

- (a) Give a suitable title for the passage. (1 mark)
- (b) On the basis of your reading of the passage, choose and write the correct answer from the options given: (7 marks)
- i) The author is primarily concerned with
- (1) discussing the importance of solar energy
  - (2) explaining the functioning of solar cells
  - (3) presenting a history of research on energy sources
  - (4) describing a possible solution to the problem of the cost of photovoltaic cells
- ii) According to the passage, which of the following encouraged use of silicon solar cells in the space programme?
- (1) The higher cost of materials such as gallium arsenide
  - (2) The high extraterrestrial efficiency of the cells
  - (3) The relative lack of cost limitations in the space program
  - (4) Both (2) and (3)
- iii) Which of the following pairs of terms does the author regard as most nearly synonymous?
- (1) Solar and extraterrestrial
  - (2) Photovoltaic devices and solar cells
  - (3) Amorphous materials and higher efficiencies
  - (4) Wafers and crystals
- iv) The material in the passage could best be used in an argument for
- (1) discontinuing the space programme

- (2) increased funding for research on amorphous materials
- (3) further study of the history of silicon crystals
- (4) increased reliance on solar energy

v) Which of the following has been mentioned as an advantage of amorphous materials over silicon crystals for solar cells?

- (1) The relative thinness of amorphous materials
- (2) The cost of amorphous materials
- (3) The size of solar cells which can be made of amorphous materials
- (4) All of the above

vi) The tone of the passage can best be described as

- (1) analytical and optimistic
- (2) biased and unprofessional
- (3) critical and discouraged
- (4) tentative and inconclusive

vii) The word 'terrestrial' as used in the passage means

- (1) on the surface of the earth
- (2) territory
- (3) to be used on roof tops or terraces
- (4) without wire connectivity

(c) Write a summary for the above passage. (6 marks)

7. (a) What are the salient features of the Minimum Wages Act, 1948?

(b) What are the powers of Inspectors as stated in Chapter II of Factories Act, 1948?

8. Explain 'social stratification' and 'gender discrimination' in India.

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