

**FACULTY OF ENGINEERING**

**B.E. 4/4 (Common to All) I-Semester (New) (Main) Examination, December 2013**

**Subject : Entrepreneurship  
(Electives - I)**

**Time : 3 Hours**

**Max. Marks: 75**

**Note: Answer all questions of Part - A and answer any five questions from Part-B.**

**PART – A (25 Marks)**

1. What is meant by intrapreneur? How is an intrapreneur different from an entrepreneur?
2. Give different concepts of entrepreneurs.
3. State the significance of collaborative interaction for technology development.
4. What do you understand by marketing mix?
5. Define a project report.
6. Distinguish between PERT and CPM.
7. What is working capital?
8. What is selective control of inventory ? Why is it needed?
9. How is a project formulated?
10. What is microenterprise?

**PART – B (50 Marks)**

11. Explain linkages between small, medium and large industries.
- 12.(a) Explain about first generation entrepreneur.  
(b) Explain about women entrepreneur.
- 13.(a) Write an essay on the growth of entrepreneurship in India.  
(b) How are Competence, Opportunities and Challenges related to each other?
14. What do you understand by project identification? Discuss with examples, the process involved in project identification.
- 15.(a) How is a project formulated? Give an overview.  
(b) What do you understand by project appraisal ? Why it is done?
- 16.(a) What are various factors motivating people to become entrepreneurs?  
(b) Discuss the advantages and limitations of PERT and CPM with suitable examples.
17. Write short notes on the following:
  - (a) Technical Feasibility
  - (b) Market Assessment
  - (c) Working Capital

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**FACULTY OF ENGINEERING**

**B.E. 4/4 I – Semester (Old) Examination, December 2013**

**Subject: Entrepreneurship (Elective – I)**

**Time: 3 Hours**

**Max.Marks: 75**

**Note: Answer all questions from Part A. Answer any five questions from Part B.**

**PART – A (25 Marks)**

1. Enumerate at least three advantages of SSI units over large units.
2. List the advantages and disadvantages of Private Limited Company over 'Sole Trader'.
3. Explain the factors to be considered while deciding on the choice of technology.
4. What is break-even analysis? Explain its use in financial analysis of a project.
5. What are the sources of short-term funds?
6. How do you carry out business opportunity survey?
7. When do you use PERT? Give two examples.
8. Explain any two qualities of Leadership.
9. Describe the need for achievement, need for affiliation and need for power.
10. What is working capital? How do you estimate it?

**PART – B (50 Marks)**

- 11.(a) Define leadership. Justify the statement "The essence of leadership is followership".  
(b) What are the theories of leadership? Explain.
12. What Time Management Techniques are available that ensure a project being completed on time.
- 13.(a) Bring out the relationship between economic growth and entrepreneurship.  
(b) What is CPM? Explain its use in planning a project execution for a SSI.
- 14.(a) What are the risks faced and rewards gained by entrepreneurs while setting up a SSI?  
(b) What is business opportunity survey? Explain how do you carryout the same.
- 15.(a) What are the problems and risks faced by women entrepreneurs?  
(b) What is margin money? What are the sources of finance for starting a SSI?
16. What are the issues considered in Technical and Financial analysis of a project? Explain how you will carryout the same.
17. For any project known to you, show a detailed project report.

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**FACULTY OF ENGINEERING**

**B.E. 4/4 (Mech.) I – Semester (New) (Main) Examination, December 2013**

**Subject : Conventional Energy Sources (Elective – I)**

**Time : 3 hours**

**Max. Marks : 75**

**Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.**

**PART – A (25 Marks)**

1. What is the present annual energy consumption of the world? How much of it is in India?
2. What do you understand by energy audit?
3. Define beam radiation, diffused radiation, global radiation and solar time.
4. What features of solar energy make it attractive for use in irrigation water pump?
5. Give the classification of solar cells.
6. What are the major applications of wind energy?
7. How is biogas produced from biomass?
8. What are the potential geothermal sites in India?
9. What are the environmental impacts of tidal energy?
10. What is meant by Yaw control in wind turbines?

**PART – B (50 Marks)**

11. List the various non conventional energy resources. Give their availability, relative merits and their classification.
- 12.a) Calculate the angle of incidence of beam radiation with the normal to a flat plane collector, tilted by  $45^\circ$  from the horizontal surface and pointing due south, locate at Mumbai at 01.30 pm (IST) on 15<sup>th</sup> November. The longitude and latitude of Mumbai are  $72^\circ 49'$  E and  $18^\circ 54'$  N. The standard longitude for IST is  $81^\circ 44'$  E.  
b) Explain with a neat sketch the construction and working of a flat plate collector.
- 13.a) With the help of a block diagram, explain the operation of a grid interactive solar photo voltaic system.  
b) Explain the solar industrial heating system with a simple sketch.
- 14.a) Using Betz model of a wind turbine, derive the expression for power extracted from wind. What is the maximum theoretical power that can be extracted and under what condition?  
b) What principles may be used for measurement of wind speed? What is the standard height for measurement of wind speed?
- 15.a) Explain briefly the various biomass conversion techniques.  
b) What are the usable forms of biomass? Name their composition and fuel properties.
- 16.a) Explain the vapour dominated (dry steam) system of geothermal energy extraction with a sketch.  
b) What are the environmental considerations in the use of geothermal energy?
- 17.a) Explain the closed cycle (Anderson cycle) OTEC plant with a sketch.  
b) What are the main advantages and disadvantages of OTEC systems?

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**Max. Marks : 75**

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**FACULTY OF ENGINEERING****B.E. 4/4 (Mech.) I-Semester (Old) Examination, December 2013****Subject : Non-Conventional Energy Sources  
(Electives - I)****Time : 3 Hours****Max. Marks: 75****Note: Answer all questions of Part - A and answer any five questions from Part-B.****PART – A (25 Marks)**

1. Comment on the prospects of fossil fuels in India.
2. What is meant by renewable energy sources?
3. Define declination angle, hour angle, zenith angle, solar azimuth angle and angle of incidence.
4. What is a solar pond?
5. Give a block diagram of Wind Energy Conversion System (WECE).
6. What are the major applications of wind power?
7. What is the current status of geothermal energy in India?
8. What are the various ways of extracting energy from biomass?
9. What are the factors affecting the performance of a biogas digester?
10. What is the source of tidal energy? What is the minimum tidal range required for a practical tidal plant? How much is the potential in tides?

**PART – B (50 Marks)**

- 11.(a) Discuss the main features of various types of renewable and non-renewable energy sources. (5)
- (b) Explain the importance of non conventional energy sources in the context of global warming. (5)
- 12.(a) For solving a problem of increased energy demand, evaluate the benefits of energy conservation as compared to increasing the generation capacity. (5)
- (b) What are the steps taken by the Ministry of Renewable Energy Sources for meeting the increasing energy demands in India in the context of available potential of renewable energy? (5)
- 13.(a) Calculate the monthly average of the daily global radiation on the horizontal surface at Gulmarg ( $34.05^{\circ}\text{N}$ ,  $74.38^{\circ}\text{E}$ ), during the month of October if the average sunshine hour per day is 5 hours. Take  $a = 0.35$  and  $b = 0.40$ . (6)
- (b) Explain the depletion process of solar radiation as it passes through the atmosphere to reach the surface of the earth. (4)
- 14.(a) Classify the different types of solar thermal collectors and show the constructional details of a flat plate collector. What are its main advantages? (6)
- (b) Explain the main features of different solar cells based on the active material used in their fabrication. (4)
- 15.(a) Sketch the diagram of a HAWT and explain the functions of its main components. (6)
- (b) Comment on the environmental impacts of wind energy. (4)
- 16.(a) Explain the various types of geothermal resources. (5)
- (b) What are the different biomass energy resources and what is the energy yield from each of them? (5)
- 17.(a) Explain the working of a closed cycle OTEC plant. (5)
- (b) What are main advantages and disadvantages of ocean wave energy? (5)

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