

THE OPEN UNIVERSITY OF SRI LANKA
FACULTY OF ENGINEERING TECHNOLOGY
MASTER OF TECHNOLOGY IN INDUSTRIAL ENGINEERING – LEVEL 07
FINAL EXAMINATION – 2011/2012
MEX7118– TECHNOLOGY MANAGEMENT



DATE : 04TH MARCH 2012
TIME : 0930-1230 HRS
DURATION : THREE (03) HOURS

Instructions

1. Read the questions carefully before answering.
 2. Please note that you should write your registration number and your index number in each pages of your answer book. Do not write your name.
 3. In case of doubt, please consult the supervisor or an invigilator conducting the examination.
 4. This paper consists of Six (06) questions. Answer only five (05) Questions. Question No.01 is compulsory.
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Q1. (Compulsory Question)

Read the following news article and answer the questions below:

Finnish 'clean tech' firms look for joint venture in India

New Delhi, Feb 3, (IANS):

"Several Finnish companies are keen to form joint ventures with Indian firms to expand their operations in the country and promote the use of clean technology", the Nordic nation's Environment Minister Paula Lehtomaki said Thursday.

"Finnish companies are looking for partners in India. Some of them have already started their businesses with local partners. Many more are looking for partners to explore the possibility of further investment," the minister said.

"Finland is a leader in green technologies. We have right technology and know-how and are keen to share it with India," Lehtomaki told IANS an event organised by Cleantech Finland here on the sidelines of the Delhi Sustainable Development Summit here.

She said Finnish and Indian government had pledged to work together to promote the use of environment friendly technologies and a key focus of such cooperation will be in renewable energy and water management.

"The global challenges we are facing today can be turned into opportunities with the right technologies and know-how. What is needed is enhanced cooperation and sharing of knowledge," the minister said, adding green economy will be the focus of the future.

"Green economy is essentially about integrating environmental aspects into all sectors of the society -- and simultaneously boosting economic growth by creating new green jobs." 00031

Leading Finnish companies including The Switch, Kemira, Metso, Picosun and Ruukki -- are keen to expand their operation in India through joint ventures in clean technology: Following are their initiatives:

Kemira Oyj: This company has a joint venture with Hyderabad-based water infrastructure firm IVRCL for water treatment. It started in India in 2008 and invested nearly \$10 million thus far, with plans to scale it up manifold in the near future.

The firm is involved in desalination, potable water and waste water management projects. Officials said the company will soon set up a manufacturing base in India as well, and combine their know-how with \$1.5 billion IVRCL's expertise in water infrastructure.

The Switch: This company, which supplies wind power and new energy applications, started business in India last year. The company plans to invest \$50-\$100 million in India in a couple of years and is looking at partners for a joint venture.

Metso: This company has entered into a pact with Aditya Birla Group's Grasim Industries to supply recovery boilers by 2012. The boilers to replace the two ones at the company's rayon grade pulp mill at Kumarapatnam in Karnataka.

Picosun Oy: This company is a manufacturer of state-of-the-art atomic layer deposition system, which helps in depositing ultra-thin films on surfaces. These are used in solar and atomic energy plants. The company is also looking for Indian partners.

- (i) Discuss the advantages and disadvantages that the Indian companies will experience as a result of entering into joint venture agreements with the Finnish companies as a means of acquiring technology. Support your answer with examples drawn from the above news article.

(20 marks)

- (ii) Select one other technology transfer mechanism that is available for the Finnish companies in transferring their technologies to India. Discuss the pros and cons of selecting this method as opposed to the joint ventures. Support your answer with examples drawn from the above news article.

(20 marks)

Q2. "Technologies can be good, bad or ugly". Explain what you mean by the term 'technology' and discuss the need for the management of technology with reference to the above statement.

(15 marks)

~~Q3.~~ (i) Briefly introduce the concepts of ~~components of technology~~ and 'technological capabilities'. 00031

(07 marks)

(ii) Explain how the level of technological sophistication of an organisation could be described using the concepts introduced in Q3(i) above.

(08 marks)

Q4. Briefly explain the phases in the technology life cycle and discuss how the competition in an industry changes at different phases of the life cycle.

(15 marks)

Q5. "Late developing enterprises may follow the reverse order of technology life cycle – from the end to the beginning." Explain briefly with reference to the strategic progression of an enterprise.

(15 marks)

Q6. Describe the constituent institutions and their linkages in the innovation triangle using examples from an industry known to you.

(15 marks)

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