THE OPEN UNIVERSITY OF SRI LANKA

BACHELOR/DIPLOMA OF ENGINEERING TECHNOLOGY

FINAL EXAMINATION - 2011/2012

MPJ 4131 - HISTORY OF TECHNOLOGY - LEVEL 04

DURATION: THREE (03) HOURS

OPEN BOOK TEST (OBT)

Date: 02nd March 2012



Answer any four (04) questions only.

- 01. i. Give reasons for selecting the Samanalawewa area to build wind powered furnaces.
 - ii. What were the usages of iron/steel in ancient Sri Lanka?
 - iii. Briefly explain the unique features of the smelting furnaces at Samanalawewa for steel manufacturing in ancient Sri Lanka.
- 02. i. Explain briefly the role played by each of the following tanks
 - a) Forest tank
- b) Mountain tank
- c) Erosion control tank
- Backup tank

Time: 1400-1700 hrs.

ii. The two most significant properties in the dry zone were land and water. Explain briefly how land and water were utilized by the dry zone farmer families in a sustainable and reasonable manner.

d)

- 03. i. What were the factors that led to the invention of printing by the ancient Chinese before any other nation?
 - ii. It is now established that Chinese were the first nation to have sailed the seas to America.
 - a) What particular technological device enabled the Chinese to do so?
 - b) What is the difference between the Chinese and the Europeans when they sailed the seas and landed in America and other foreign countries?
 - c) Chinese invented gunpowder before any other nation, but for what purposes they used gunpowder compared to the Europeans?
- 04. i. Explain briefly the four different types of irrigation in the Arabic (Middle Eastern) countries namely Basin irrigation, Perennial irrigation, Terrace irrigation and Wadi irrigation.
 - ii. Briefly explain the two basic types of dams namely Gravity dam and Arch dam.

- 05. i. Compare and contrast the contribution made by the ancient Indian Mathematician Bhaskara (about 1150 A.D) and the European Mathematician Lagrange (about 1766) towards solving the Pellian equation $Cx^2 + 1 = y^2$ where x,y are integers, $xy \neq 0$ and C is a given non-square integer.
 - ii. Explain briefly the contributions made by the following Indian and Persian Mathematicians
 - a)
 - Aryabhatta (06th Century) Brahmagupta (07th Century) Al-Khowarizmi(09th Century) b)
 - c)

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