

**PRINCE OF SONGKLA UNIVERSITY**  
**FACULTY OF ENGINEERING**

Final Examination: Semester II

Academic Year: 2014

Date: May 17, 2015

Time: 13:30-16:30.

Subject: 225-503 Production Systems & Management

Room: A400

**Instructions**

- There are 4 questions in 2 pages (include this cover page)
- Answer all 4 questions in the **answer**-book provided
- Open-book exams. All materials, books, papers, calculators and dictionaries are allowed.
- Total score is 80

Questions	Full Score	Assigned Score
Q1	20	
Q2	20	
Q3	20	
Q4	20	
<b>Total</b>	<b>80</b>	

Assoc. Prof. Somchai Chuchom

ทฤษฎีในการสอบ โทษขั้นต่ำคือ ปรับตกในรายวิชาที่ทฤษฎี และพักการเรียน 2 ภาคการศึกษา

**Question 1** (20 marks)

- 1-1) How is a pull system distinguished from a push system in production and inventory control?
- 1-2) Explain the concepts of the TPS (Toyota Production System) and show the details of tools or sub-systems that support the implementation of TPS successfully.
- 1-3) In the case of unsuccessful implementation of TPS, discuss the main causes and lessons learnt from it.

**Question 2** (20 marks)

Choose **only one** topic from the list below and explain in details on the selected topic to show that it is a useful tool for decision making in management for manufacturing system. Demonstrate it by showing any techniques or tools it applies to reach the decision. Also discuss on the reviewed papers or related work if possible. The list of topics is:

- 2-1) Production Planning and Scheduling (PERT, CPM, MRP)
- 2-2) Forecasting Techniques
- 2-3) Quality Engineering (QC, QA, TQC/TQM, QFD)
- 2-4) Production Plant Layout and Location Selection
- 2-5) Production Control (TPM, Inventory, Cost)

**Question 3** (20 marks)

Neural network (NN) is a tool that can solve problems in management of production system. Explain concepts and activities involved in NN related to:

- 3-1) Areas in which NN can be appropriately applied
- 3-2) Neural network architecture
- 3-3) Neural network learning and learning rules
- 3-4) General steps involved in using NN to solve the problem

**Question 4** (20 marks)

In management of the production system, the manager makes decision on the valid and complete information. Using the product and processes you have proposed and presented in the class as a case study, try to identify which information/data that your supporting staff should provide for you in order that you can efficiently set the layout, the production line, the man power, purchasing, production scheduling and control of budget. Show your answer in the form of suitable charts, diagrams, tables or list of information.

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