

# 大同大學 九十一 學年度 轉學考試 試題

考試科目：資訊管理導論 系別：資訊經營學系 級別：三年級 第 / 頁，共 2 頁

註：本次考試不可以參考自己的書籍及筆記； 不可以使用字典； 不可以使用計算器。

The U.S. chemical industry is high competitive and tightly controlled. ACME, a multinational chemical and pharmaceutical manufacturing company with three U.S. divisions, tries to maintain an edge by maximizing its manufacturing efficiency. One approach is to have its divisions use an integrated manufacturing resource planning system.

The steps involved in turning raw materials into finished chemical products are relatively simple. However almost anyone in marketing, finance, product development, or management can affect the production schedule. A single change in schedule for one product at one plant may cause a "ripple effect" on products, intermediates, and raw materials at other plant. Stresses placed on processes by conflicting business and production demands can result in costly inefficiencies—excess inventory on the one hand and failure to meet customer demands on the other. Production schedules and plans must be continually adjusted to meet the changing business environment.

Like other manufacturers, ACME tries to minimize these inefficiencies by using a production plan and master schedule to tie all of the manufacturing activities together. The production plan establishes monthly rates of production and is developed to meet the sales plan. The master schedule converts the monthly product rates into a weekly schedule and plans the necessary materials and capacity based on the availability of material and plant capacity, responds to actual customer orders. The daily production schedule tracks production and shipments on a daily basis to ensure that both production and business plans are met.

ACME's MRP system helps to meet these planning needs by providing a scheduling system to show what is required by a particular process and when. The system plans all levels of a product from raw materials through finished goods and tracks information to ensure that tasks can be completed quickly and profitably. The MRP system shows today's balance for every product, intermediate, and raw material it tracks. It can project what the balance will be on any future date, given expected sales, shipments, production, and purchases. It can recommend changes in shipping or manufacturing schedule based on its calculation of shortfalls and excesses.

The system is used at many locations by employees whose positions range from inventory clerks to production planners to division managers. Some of these users need exact, detailed answers at once. Others expect to see an overall picture once a quarter. The following examples are illustrative.

- ◆ ACME's agricultural chemical products are manufactured at plants in

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Illinois and Alabama, and about 15 by outside processors under contract. A vendor has shipped defective bottles to an outside processor that produces Ag Chem #1. The inventory control clerk in the Contract Manufacturing Department knows that Ag Chem #1 is also produced at the Alabama plant. He wants to find out if some bottles can be transferred to the outside processor (in Memphis) without too much impact on the Alabama plant's schedule.

- ◆ The director of production is preparing for the quarterly planning meeting with his counterpart in world headquarters. He needs to know the net inventories of Ag Chem #5, together with expert and marketing plans for the next five quarters.
- ◆ Marketing has changed plans for Ag Chem #7 (made at the Alabama plant), causing an increased demand for Ag Chem #11 (made at the Illinois plant). This change, in turn, may affect the schedule for HCN (an intermediate product made at the Illinois plant). The Illinois plant needs to know how to adjust HCN production. It may also need to rework the schedules for raw materials and labor.

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The MRP system runs on the central mainframe computer at ACME's U.S. corporate headquarters. A network of terminals with telecommunications links to the central computer ties in divisional headquarters, plant sites, and departments. Inquiries such as that of the inventory clerk for the number of bottles on hand can be serviced directly on-line other two examples require much more complex totaling, analysis, and batched together and run later or overnight.

Since the MRP systems was installed, ACME has reported inventory reductions of up to \$2 million, with annual saving of \$240,000 in inventory carrying costs and a 98% inventory accuracy.

What organizational levels and organizational functions dose the system serve? How large a role does the system play? Discuss the following statement, "If the only function of the MRP system was to track bottles, a much simpler system could have been developed.

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