一. Multiple Choice 60% (單選題，每題兩分共計六十分)

1. RosettaNet is:
   a. an XML dictionary defining all properties of a PC, such as modems, monitors, and cache memory.
   b. a high-level language translator.
   c. a site with the ability to link the supply chain from top to bottom.
   d. a new technology for the Internet.
   e. a proprietary database for programmers.
   f. none of the above.

2. ESS are specifically designed to serve this level of the organization:
   a. operational.
   b. end-user.
   c. middle management.
   d. senior management.
   e. none of the above.

3. _______________________ is the process that integrates supplier, manufacturer, distributor, and customer logistics processes.
   a. Collaborative distribution
   b. Supply-chain management
   c. Reverse logistics
   d. Human Resources
   e. none of the above.
4. _______________ uses a set of integrated applications to address all aspects of the customer relationship.
   a. CRM
   b. MIS
   c. CLE
   d. CLU
   e. none of the above.

5. The formula: \( \frac{\text{Original Investment}}{\text{Annual net cash flow}} = \text{number of years} \) is the one used for the:
   a. internal rate of return.
   b. profitability index.
   c. net present value.
   d. cost-benefit ratio.
   e. payback method.
   f. none of the above.

6. Which types of systems consolidate the relevant knowledge and experience in the firm to make it available to improve business processes and management decision making?
   a. TPS
   b. Extranets
   c. KMS
   d. CRM
   e. none of the above.

7. Interpretations of Moore’s law assert that:
   a. computing power doubles every 18 months.
   b. transistors decrease in size 50% every two years.
   c. data storage costs decrease by 50% every 18 months.
   d. none of the above.
8. The multitasking, multi-user, operating system developed by Bell Laboratories that operates on a wide variety of computing platforms is:
   a. Unix.
   b. Linux.
   c. Mac OS.
   d. COBOL.
   e. none of the above.

9. A “SAN” is a:
   a. server area network.
   b. storage area network.
   c. scalable architecture network.
   d. service-oriented architecture network.
   e. none of the above.

10. Connecting geographically remote computers in a single network to create a “virtual supercomputer” is called:
    a. co-location.
    b. edge computing.
    c. grid computing.
    d. utility computing.
    e. none of the above.

11. An industry-wide effort to develop systems that can configure, optimize, tune, and heal themselves when broken, and protect themselves from outside intruders and self-destruction is called:
    a. grid computing.
    b. utility computing.
    c. edge computing.
    d. autonomic computing.
    e. none of the above.
12. Which type of software is created and updated by a worldwide community of programmers and available for free?
   a. Software packages
   b. Mashups
   c. Outsourced
   d. Open source
   e. none of the above.

13. Commercially available software that enables multiple systems to exchange data through a single software hub is called:
   a. SOAP.
   b. WSDL services.
   c. EAI software.
   d. XML software.
   e. none of the above.

14. Which of the following is an example of an SOA environment?
   a. Amazon.com’s operation of hundreds of services, such as billing or customer interface, delivered by different application servers
   b. E*Trade’s use of lower-cost Linux servers that delivered increased computer performance
   c. Thermos’s use of hosted Oracle systems software running on Oracle’s computers
   d. None of the above

15. Software applications that are based on combining different online software applications are called:
   a. GIS.
   b. Ajax.
   c. mashups.
   d. edge computing.
   e. None of the above

16. Duplicate data in multiple data files is:
   a. data redundancy.
   b. data multiplication.
c. data independence.
d. data backups.
e. None of the above

17. The logical view of database design:
a. shows how data are organized and structured on the storage media.
b. presents an entry screen to the user.
c. allows the creation of supplementary reports.
d. presents data as perceived by end users.
e. None of the above

18. __________ is the discount rate that will equate the present value of the project’s future cash flows to the initial cost of the project.
a. The internal rate of return
b. The profitability index
c. The net present value
d. The cost-benefit ratio
e. The payback method
f. None of the above

19. A schematic of the entire database that describes the relationships in a database is called a(n):
a. data dictionary.
b. intersection relationship diagram.
c. entity-relationship diagram.
d. data definition diagram.
e. None of the above

20. A data mart usually can be constructed more rapidly and at lower cost than a data warehouse because:
a. a data mart typically focuses on a single subject area or line of business.
b. all the information is historical.
c. a data mart uses a Web interface.
d. all of the information belongs to a single company.
e. None of the above
21. The tool that enables users to view the same data in different ways using multiple dimensions is:
   a. predictive analysis.
   b. SQL.
   c. OLAP.
   d. data mining.
   e. None of the above

22. Data mining is a tool for allowing users to:
   a. quickly compare transaction data gathered over many years.
   b. find hidden relationships in data.
   c. obtain online answers to ad hoc questions in a rapid amount of time.
   d. summarize massive amounts of data into much smaller, traditional reports.
   e. None of the above

23. Which type of planning tool shows each task as a horizontal bar whose length is proportional to the time required to complete it?
   a. PERT chart
   b. Gantt chart
   c. Both a and b
   d. Neither a nor b

24. The components of a DSS are the:
   a. internal corporate database, external data sources, and analysis tools.
   b. data visualization tools, software, and graphics capabilities.
   c. database, graphics capabilities, and analysis tools.
   d. database, software system, and user interface.
   e. None of the above

25. A pivot table is a:
   a. spreadsheet tool that displays two or more dimensions of data in a convenient format.
   b. type of relational database.
   c. chart tool that can rotate columnar data quickly and visually.
26. An independent computer program that copies itself from one computer to another over a network is called a:
   a. worm.
   b. Trojan horse.
   c. bug.
   d. pest.
   e. None of the above

27. Using numerous computers to inundate and overwhelm the network from numerous launch points is called:
   a. spamming.
   b. spoofing.
   c. DDoS.
   d. cybervandalism.
   e. None of the above

28. A multiplexer is a:
   a. programmable telecommunications computer that collects and temporarily stores messages from terminals until enough messages are ready to be sent economically.
   b. specialized computer that supervises communications traffic between the CPU and peripheral devices.
   c. device that enables a single communications channel to carry data transmissions from several sources simultaneously.
   d. special purpose computer, attached to the host computer, dedicated to communications management.
   e. high-speed and inexpensive computer designed to carry multimedia signals.
   f. None of the above

29. Fiber-optic cable consists of:
   a. thousands of strands of clear glass fibers.
b. glass fibers wound with copper wire.
c. twisted pairs of glass fibers.
d. dedicated 10-megabit lines.
e. glass fibers transmitting an analog signal
f. None of the above

30. TQM focuses on:
a. mid-level management.
b. a series of continuous improvements.
c. production employees.
d. eliminating design errors.
e. decreasing cycle times.
f. None of the above

Essay 40% (簡答題四題，每題十分，合計四十分)

1. Describe MIS and DSS and differentiate between them.

2. List and describe the network topologies in use today. What are the advantages and disadvantages of each?

3. Distinguish between grid computing, edge computing, on-demand computing, and autonomic computing.

4. What is the balanced scorecard model? Why is it particularly useful? Where does it get its information?