西安电子科技大学

考试时间 120 分钟



试

题

题号		_		1 1		三			总分					
	分数													
1	.考试形式:	闭卷;	2.考	试日期:	202	22 年	月	日;	3.本	试卷共3	大题,	满分	100	分。
列	£级		_学号_			姓名			1	任课教师				

NOTE: Write all answers on the answer sheet.

Q.1: Multiple Choice. (20points)

1.Which	of	the	following	is	a	graphical	network	model	used	to	depict	the
interdependei	ncies	betw	zeen a proje	ct's	tas	ks?						

- A. PERT chart
- B. Bar chart
- C. Line chart
- D. Gantt chart
- 2. What models the life cycle of a single object?
- A. activity diagram

B. temporal diagram

C. statechart diagram

- D. event diagram
- 3. Which of the following could be modeled as an external agent on a DFD modeling a payroll system?
 - A. A bank receiving a tape of payroll entries for direct deposit.
 - B. A programmer writing software code for the system
 - C. An operations engineering mounting a tape on a tape drive.
 - D. A DBA tuning the payroll database
- 4. This type of object contains business-related information that is typically persistent and stored to a database. It is an:
 - A. temporal object
- B. entity object
- C. control object D. interface object
- 5. A systems design approach that utilizes structured, prototyping, and JAD techniques to quickly develop systems is known as:
 - A. information engineering
- B. accelerated application development

C. model-driven design

- D. rapid application development
- 6. Which of the following is **not** a Transaction Processing System?
- A. Order Processing

B. POS (Point Of Sales) system

C. Sales reporting

- D. Airline reservations
- 7. Structured design is considered what type of technique?
- A. Process-oriented technique
- B. Data-oriented technique
- C. Object-oriented technique
- D. RAD
- 8. _____ is the process of scooping, planning, staffing, organizing, directing, and

controlling a project to develop an information	n system.							
A. Process management	B. Requirements mana	agement						
C. Project management	D. System management							
9. Which of the following is a tool that ca	n be used to specify ap	plication architecture?						
A. architecture design diagram	B. physical data flow diagram							
C. structure chart	D. physical data mode	l diagram						
10. A system in which components are d	istributed across multi	ple locations and computer						
network is called a(n):								
A. networked system	B. legacy system							
C. multi-tiered system	D. distributed system							
11. Which of the following reports are ext	ternal outputs that reenter the system as inputs?							
A. turnaround B. detailed	C. summary	D. exception						
12. Which of the following is not a commo	on user interface proble	em?						
A. excessive use of computer jargon								
B. less than intuitive design								
C. interface design is consistent								
D. inability to distinguish between altern	ative actions							
13. Those things that an object can do a	and that correspond to	o functions that act on the						
object's data (or attributes) is known as $a(n)$:								
A. actor B. class	C. action	D. behavior						
14. Costs that occur at regular intervals ar	nd known rates are kno	own as						
A. variable B. fixed	C. intangible	D. tangible						
15 According to PIECE framework, "A	ccessing to the system	m or information must be						
controlled." belongs to $____$ requirements.								
A. Performance B. Information	C. Control	D. Service						
16. Input format checks								
A. ensure that the correct type of data is i	nput.							
B. compare data entered against the know	n formatting requirem	ents for that data.						
C. determine whether a known relationsh	nip between two fields	is valid.						
D. determine data entry errors on primary	y keys.							
17 diagrams graphically depict t	he interactions betwee	en the system and external						
systems and users.								
A. Use case B. Class	C. Object	D. Sequence						
18. Which of the following individuals ar	e mainly concerned wi	th the costs and benefits of						
an information system?								
A. A system user	B. A system analy	st						
C. A system owner	D. A system desig	D. A system designer						
19. Which of the following is not a criteria	19. Which of the following is not a criteria for evaluating candidate feasibility?							
A. system feasibility	B. operational fea	sibility						
C. schedule feasibility	D. economic feasi	bility						
20. The goal of the system analyst is to do	efine system requireme	ents that meet the following						

criteria: (i) consistent, (ii) complete; (iii) feasibility; (iv) required; (v) accurate; (vi) marketable; (vii) traceable; (viii) verifiable. Which of the following is true?

A) All, i.e. (i)-(viii)

B) All, except (iv)

C) All, except (viii)

D) All, except (vi)

Q.2: For each of the tasks listed below, draw a PERT chart and determine the critical path. (20 points)

Activity ID	Activity Description	Duration (Weeks)	Predecessor		
A	Requirement Collection	2	None		
В	Business process analysis	2	A		
С	Business data analysis	3	В		
D	Process design	8	В		
E	Database design	5	С		
F	Interface design	1	C,D		
G	Report design	4	D,E		
Н	Programming desgn	5	F,G		
Ι	Test and Documentation	7	G		
J	Installation	3	H,I		

Q.3: Given the narrative description, answer the questions. (60 points)

- (1) Draw the <u>Context Data Flow Diagram</u> and <u>Top-level Data Flow Diagram</u> for SAS (15 points)
- (2) Produce an <u>Entity Relationship Diagram</u> (Logical Data Model) and a set of <u>Normalized Tables</u> for the scenario. (20 points)

Sample table: Tblname (primarykey#, foreignkey#, attrl, attr2)

- (3) It has been decided that the system will be developed using object-oriented analysis and design (OOA/OOD) methodology.
 - a) Draw a <u>UML Use Case diagram</u> for SAS and write the expanded description of <u>ONE</u> <u>primary use case (表格形式)</u>. (15 points)
 - Design an initial <u>Analysis Class Model</u> that shows the process and data required to support SAS. (10 points)

A Student Accommodation Service(SAS) helps university students to find properties (公寓) to rent in the city in which they are studying. An information system is required to help the Service maintain lists of landlords, their properties and of students seeking accommodation.

All of the properties are owned by private landlords: each property is owned by one landlord, though some landlords own several properties. The name, address and telephone

number of landlords are kept. When new properties are added to the system they are allocated a unique identifying number and details are taken of the address, type of property (for example, flat, terraced (有阳台的) house, detached house (独立式住宅)), the maximum number of tenants (房客) it is suitable for and amount of the rent. Landlords are charged a fee for each property that is added to the system.

Students seeking accommodation have to register with the Service providing their name, current address, telephone number, their date of birth and gender (性利). Once registered, a student can be provided with a list of available properties. If a student makes a request to review (查看) a property the Service arranges a viewing with the landlord. Details are kept of each viewing that is arranged including the date on which it took place and which student or students were involved (friends often seek accommodation together).

Landlords notify the Service when a property is no longer available for rent and when a property is once again available. In both cases the Service updates the property file so that students seeking accommodation can be given an accurate list.