Menofia University
Faculty of Computer and I
Department: (CS & IS)
1st Final Exam.
Date: 11/3/2021

Code: 230CEEE

Subject: (Molding & Simulation)
Year: Level 3
Time Allowed: 3Hours
Full Mark: 70

اسم الطالب /

رقم الجلوس

ملحوظه هامة: كل طالب يكتب الكود الخاص بورقة الأسئلة في bubble sheet مع بياناته ثم يسلم ورق الأسئلة بعد كتابه الاسم ورقم الجلوس مع bubble sheet

Answer all the following questions:

Question Choose the correct Answer

1	Advantage of Simulation such that ----------			
	a)Can answer "what-if" questions	b)Can answer "when-if" questions	c)Can answer "why-if" questions	Not all
2	Advantage of Simulation such that ----------			
	a)with disrupting	b)without disrupting	c) have disrupting	d)All
3	---------- is an abstract representation (real) system			
	a)A Model	b)A *simulation*	c)A system	d)Not All
4	How can to develop a simulation model?			
	a)system entities	b)performance measures	c)input variable	d)All
5	Disadvantages of simulation as:----------			
	a)model is simple	b)model is complex	c)model is unique	d)Not all
6	----------is the mathematical study of waiting lines or queues.			
	a)Queuing line	b)Queuing list	c)Queuing theory	d)Not all
7	----------Some variables in the simulation model are random			
	a)Stochastic	b)Dynamic	c)Discrete –Event	d)All
8	The ----------is the number of units in the system and the status of the server, busy or idle.			
	a)state of the system	b)state of the simulation	c)state of the model	d)All
9	----------simulation is the Not appropriate tool at ----------			
	a)If it is easier to measure direct experiments.	b)If it is easier to perform direct experiments.	c)If it is easier to do direct experiments.	d)All
10	Physical Simulation models is a ----------			
	a)Discrete-event Simulation models	b)Continuous -event Simulation models	c)static-event Simulation models	d)All
11	The ---------- usually takes the form of a set of assumptions concerning the operation of the system.			
	a)Model	b)Simulation	c)System	d)All
12	---------- a description of a system where the relationships between variables of the system are expressed in.			
	a)Analytical model	b)mathematical model	c)dynamic model	d)Not all

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13	---------- Often requires making simplifying assumptions about how the system works			
	a)Model	b)Simulation	c)System	d)All
14	---------- are too expensive, too dangerous			
	a)model	b)experiments	c)simulation	d)All
15	simulation models represent systems as they change over time is called ----------			
	a)Deterministic	b)Dynamic	c)Static	d)all
16	simulation is the Not appropriate tool at ----------			
	a)If system behavior is too complex	b) If system behavior is too easy	c) If system behavior is too composite	d) all
17	---------- is the imitation of the operation of a real-world process or system over time.			
	a)A Model	b)A simulation	c)A system	a)A Model
18	simulation is the Not appropriate tool at ----------			
	a)If resources or time are not available	b)If resources or time are available	c)If resources or time are valid	d)Not All
19	Which of the following model in system modelling depicts the dynamic behavior of the system?			
	a)Behavioral Model	b)Context Model	c)Object Model	d)Not all
20	simulation is the Not appropriate tool at ----------			
	a)If the problem can be solved analytically	b) if the problem can be solved mathematic	c) if the problem can be solved manual	d)Not all
21	simulation model, sometimes called a Monte Carlo simulation, represents a, system at a particular point in time is called ----------			
	a)Deterministic	b)Dynamic	c)Static	d)all
22	simulation is the Not appropriate tool at ----------			
	a)If cost exceed savings.	b)If cost exceed not savings.	c)If cost exceed savings and valid.	d)All
23	Advantage of Simulation such that ----------			
	a)understand how the system operates.	b) understand how the system idle.	c)understand how the system operates and idle.	d)All
24	---------- is the quantitative measure of a system.			
	a)Simulation	b)Performance	c)Modeling	d)All
25	All models are wrong, some models are useful which say this statement----------			
	a)George Box , 1977	b)George Box , 1978	c)George Box , 1979	d)All
26	Any system can have ----------			
	a)multiple models	b)one models	c)two models	d)All
27	---------- for predicating the effect of changes.			
	a)Design tool	b)Analysis tool	c)dynamic model	Not all
28	Disadvantages of simulation as:----------			
	a)Simulation results can be difficult to	b)Simulation results can be easy to interpret.	c)Simulation results can be complex to interpret.	d)All

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	a)event.	b) entity	c)attribute	d)All
45	The key properties of random numbers are:----------			
	a) Uniform and dependent	b) Different and dependent	c) Uniform and independent	d) All
46	A simulation model with three features			
	a) Stochastic	b) Dynamic	c) Dicrete –Event	d) All
47	a collection of entities that interact over time this statement define the ----------			
	a) System	b) simulation	c) modeling	d) All
48	---------- collection of associated entities , ordered in some logical fashion			
	a) List	b)entity	c)model	d)Not All
49	----------is a list of event notices for future events, ordered by time of occurrence, also called the future event list (FEL)			
	a) Event list	b) Events Queue	c)events	d)Not All
50	----------a collection of variables that contain all the information necessary to adequately describe the system at any time			
	a)A Model	b)A *simulation*	c)A system state	d)Not All
51	----------changes in system state occur at discrete time instances			
	a)Stochastic	b)Dynamic	c)Discrete –Event	d)Not all
52	Mathematical Methods is suitable for ----------			
	a)simple systems	b)complex systems	c)composite systems	d)All
53	To hold the events we use ----------.			
	a)simulation clock	b)Simulation event	c)Model event	d)All
54	Activity in simulation is ----------.			
	a)conditional wait	b)unconditional wait	c)Activity wait	d)All
55	Delay (----------) : a duration of time unspecified indefinite length			
	a)conditional wait	b)unconditional wait	c)Activity wait	d)All
56	----------a variable representing simulated time			
	a)simulation hours	b)simulation clock	c)time	d)All
57	----------: usually called primary event			
	a)Analytical model	b)Complete activity	c)dynamic model	d)Not all
58	A ----------is the list that an entity enters if a resources is occupies			
	a)queue	b)Row	c)line	d)All
59	Basic elements of Queuing System are----------			
	a)Entries or customers	b)Queue	c)Service channels	d)All
60	In the----------, the calling or arriving population is infinite			
	a)Several Servers channel queue	b)Several (Parallel) Servers channel queue	c)single-channel queue	d)all

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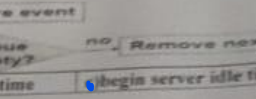
61	A ----------described by number of elements which consists the system			
	a) Queuing system	b) simulation system	c) modeling system	d) all
62	For any simple ----------, arrival rate must be less than the total service rate			
	a) multi-channel queue	b) many-channel queue	c) some-channel queue	Not all
63	The ----------is the number of units in the system and the status of the server, busy or idle.			
	a) state of the system	b) state of simulation	c) state of modeling	d)Not All
64	An ----------is a set of circumstances that cause an change in the state of the system			
	a) attribute	b) event	c) object	d)All
65	----------is completion of service on a unit			
	a) departure event	b) arrive event	c) wait event	d)not all
66	In flowchart 1 means ----------			
	a) start server idle time	b) finish server idle time	c)begin server idle time	d)Not all
67	If the server is busy, the unit enters the----------			
	a) Queue.	b) service	c) waiting	d)All
68	If the server is ----------and the queue is empty, the unit begins service.			
	a) idle	b) busy	c)empty	d)All
69	It is not possible for the server to be idle and the queue to be ----------.			
	a)empty	b)nonempty	c)busy	d)All
70	Queuing theory is the ----------study of waiting lines or queues			
	a) statistical	b) analytical	c) mathematical	d)All
71	Server is impossible is busy if queue is ----------			
	a)nonempty	b)empty	c)busy	d)All
72	---------- for predicating the effect of changes.			
	Design tool	Analysis tool	dynamic model	Not all
73	----------consists of server and queue for arrival and departure			
	a) Sugle server	b) multi server	c) parallel server	d)All
74	----------= 1/inter arrival time			
	a) arrival time	b) arrival rate	c) arrival begin	d)All
75	From this table find average inter-arrival time			



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Customer #	Inter-arrival	arrival	Service time	Time service begin	Time service end	Delay (T i Q)	Wait time	Complete time
1		0	2	0	2	0	2	2
2	2	2	1	2	3	0	1	3
3	4	6	3	6	9	0	3	9
4	1	7	2	9	11	2	4	11
5	2	9	1	11	12	2	3	12
6	6	15	4	15	19	0	4	19
total	15		13			4	17	

a)2.3 b)2.6 c)2.4 d)2.5

76 Using table in Question 75 to find average service time
a)2.17 b) 2.16 c) 2.15 d) 2.18

77 Using table in Question 75 to find average delay
a)0.66 b) 0.67 c)0.68 d)0.69

78 Using table in Question 75 to find average wait
a) 2.82 b)2.83 c)2.84 d)2.86

79 Using table in Question 75 to find Time spend on the system=----------
a) 17/6 b) 13/6 c) 15/6 d)not any one

80 In ----------there is more than one server and each server provides the same type of facility
a) Several (Parallel) Servers – Single Queue b) Several (Parallel) Servers – Several Queue c) Several (Parallel) Servers – multiply Queue d)Not all

81 Arrivals can be measured as the ----------
a) arrival time finish b) arrival time c) arrival rate d) all

82 The batch size may be either ----------.
a) deterministic b) Stochastic. c) deterministic or stochastic d)All

83 ----------: The customer may decide not to enter the queue upon Arrival
a) Balking b) Jockeying: c) Drops: d)All

84 ----------: The customer may decide to leave the queue after Waiting a certain time in it.
a) Reneging b) Balking c) Jockeying: Not all

85 ----------A server may service several customers simultaneously.
a) Batch service b) Batch group c) Batch processing d)All

86 If 12 customers enter a store per hour, the time between each arrival is----------
a)6 minute b)5 minute c) 7 minute Not all

87 ----------means that if there are multiple queues in parallel the customers May switch between

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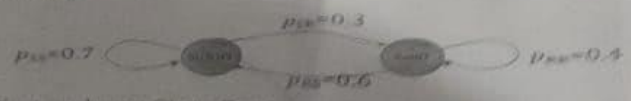
	them.			
	a) Drops:	b) Jockeying:	c) Balking	Not all
88	----------Customers may be dropped from the queue for reasons outside of their control.			
	a) Drops:	b) Jockeying:	c) Balking	d) All
89	----------A customer of higher priority immediately displaces any customers of lower priority already in service			
	a) no preemptive	b) Preemptive	c) Non-preemptive	d) All
90	----------Customers with higher priority wait current service completes, before being served			
	a) no preemptive	b) Preemptive	c) Non-preemptive	d) All
91	----------is a stochastic model used to model randomly changing systems			
	a) Markov simulation	b) A Markov model	c) Markov system	d) Not All
92	----------X(t) is a random variable that varies with time.			
	a) Stochastic Process	b) variable Process	c) random Process	d) Not all
93	From this figure  System has 2 State Space $s = \{1=SUNNY, 2=RAINY\}$ • Tomorrow it's 0.7 Sunny and 0.3 Rainy, What is the probability of Sunny and Rainy after Tomorrow?			
	a) [0.67 0.33]	b) [0.76 0.32]	c) [0.67 32]	d) [0.67 0.33]
94	The probability that it will be (FUTURE) SUNNY in DAY 6 given that it is RAINY in ---------- ----------is independent from PAST EVENTS			
	a) DAY 7	b) DAY 8	c) DAY 4	d) DAY 6
95	Which element of Markov chain can be delete $Pr\{X(t_{n-1}) \le x_{n-1} \mid X(t_2) = x_2, \ldots X(t_1) = x_1\}$			
	a) $X(t_0)=x_0$	b) $X(t_1)=x_1$	c) $X(t_{n-1})=x_{n-1}$	d) not all
96	----------are a widely used class of computational algorithms for simulating the behavior of various physical and mathematical systems, and for other computations			
	a) Monte Carlo methods	b) Markov methods	c) a and b	Not all
97	----------: is a set of assumptions that define the system			
	a) Conceptual model	b) Conceptual system	c) Conceptual	d) Not all
98	----------: A number of service centers and interconnecting queues			
	a) Service time	b) Service mechanism	c) Service system	d) All
99	----------simulation model represents a system at a point in time?			

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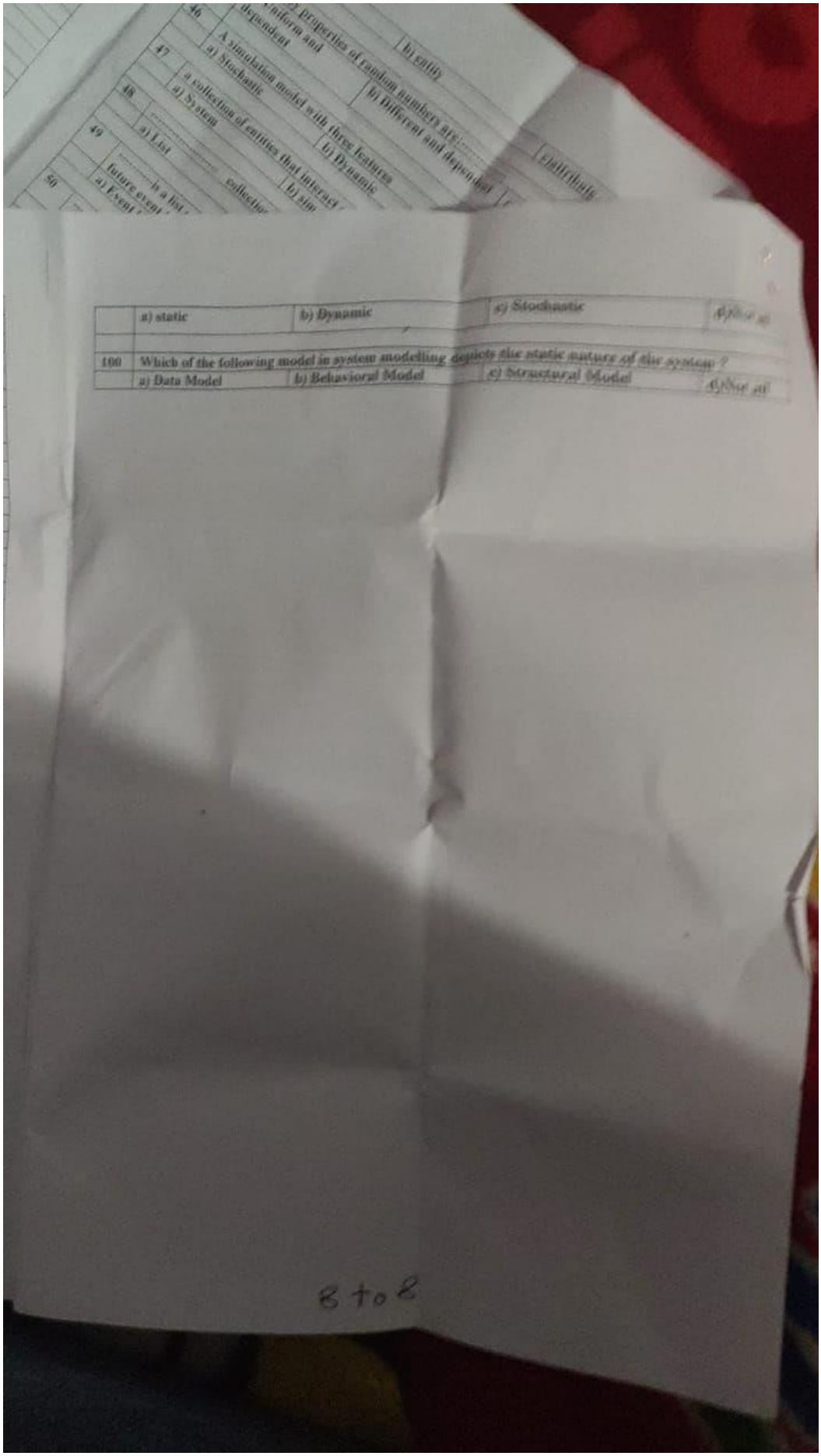

	a) static	b) Dynamic	c) Stochastic	d) None of all
100	Which of the following model in system modelling depicts the static nature of the system ?			
	a) Data Model	b) Behavioral Model	c) Structural Model	d) None of all

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