Scheme	**R2012**
Semester	7
Course Code	CPC701
Course Name	Digital Signal Processing

Question No	Answer Key
1	4
2	x(n) = x(n + N)
3	400 Hz
4	Both signals are periodic
5	Folding, Shifting, Multiplication, Summation
6	even
7	1
8	Linear convolution.
9	superposition and homogeneity
10	stable
11	discrete time systems
12	linear
13	Finite discrete sequences
14	30 Joules
15	{4, -2, 0, -2}
16	64 and 32
17	12
18	Three, four
19	overlap add and save
20	DFT
21	Finite
22	Carls coefficient
23	Fourier transform
24	recursive
25	accuracy

Scheme	**R2012**
Semester	7
Course Code	CPC701
Course Name	Digital Signal Processing

Question No	Question	a	b	c	d
1	_____operations are involved in calculation of linear convolution.	3	4	5	6
2	A discrete-time signal x(n) is said to be periodic if it satisfies the condition ----------for all integers n.	x(n)=-x(N)	x(n) = x(n + N)	x(n) = x(N)	x(n) = x(2 N)
3	Calculate the minimum sampling rate to avoid aliasing when a continuous time signal is given by x(t) = 5 cos 400πt	100 Hz	200 Hz	400 Hz	300 Hz
4	Circular convolution can be applied when _____	One signal is periodic	Both signals are periodic	Both signals are aperiodic	Unconditionally.
5	Identify all elementary operations involved in The Convolution Sum operation	Shifting, Folding, Multiplication, Summation	Shifting, Folding, Summation, Multiplication	Folding, Shifting, Multiplication, Summation	Folding, Shifting, Summation, Multiplication
6	In a discrete time signal x(n), if x(n)=x(-n) then it is called _____ signal.	Non-deterministic	even	Periodic	Energy
7	The shifted version of the discrete-time unit step sequence u(n – k) is equal to --------- for n greater than and equal to k and is equal to 0 for n < k	1	infinity	0	-1
8	_____is the basic operation to calculate the output for any linear time invariant system given its input and its impulse response	Circular convolution.	Periodic convolution.	Linear convolution.	Correlation convolution.
9	A linear system obeys the principle /principles of _____	superposition	superposition and homogeneity	homogeneity	superposition and entanglement
10	For a Linear Time Invariant (LTI) system whose impulse response is given as h[n] = x[n] + 1/2 x[n-1] + 1/4 x[n-2], the system is _____	stable	unstable	invertible	non-recursive
11	Microprocessors, semiconductor memories, shift registers, etc. are	discrete time systems	discrete time signals	Identical systems	discrete time signals and systems
12	DFT is _____process	linear	non linear	effective	periodic
13	DFT is applied to	Infinite sequences	Continuous infinite signals	Continuous finite sequences	Finite discrete sequences
14	Find energy of the signal using Parseval's theorem for X(K) = {10, -2+2j, -2, -2-2j}	98 Joules	30 Joules	32 Joules	4 Joules
15	The DFT of x[n] = {0, 1, 2, 1} is_____	{4, -2, 0, -2}	{4, 2, 0, -2}	{4, 2, 0, 2}	{4, -2, 0, 2}
16	In an N-point sequence , if N=16 ,the total number of complex additions and multiplications using Radix-2 FFT are	64 and 80	80 and 64	64 and 32	24 and 12
17	How many complex additions are required to be performed in linear filtering of a 4 point sequence using DFT algorithm?	2	12	6	8
18	In an 8-point DFT radix-2 FFT, there are ____ stages of computations with ____ butterflies per stage.	Three, three	Four, four	Three, four	Four, three
19	Large amounts of memory is required and computation of DFT becomes cumbersome. This is overcome by which method	overlap add and save	overlap add	overlap save	convolution
20	FFT has faster computations compared to	DFT	IDFT	DFS	FS
21	Memory of FIR system is	Finite	Infinite	Can be finite or infinite	Zero
22	To measure the degree of linear dependence between two variable,---------- is used	Carls coefficient	convolution	correlation	FFT
23	Most biomedical signals of practical interest can be decomposed into a sum of sinusoidal signal components. For the class of finite energy signals, the decomposition is called the _____	Fourier series	Fourier transform	Laplace transform	Z transform
24	IIR filters are	recursive	repetitive	nonrecursive	low pass filters
25	DSP processors have high level of ---------compared to analog processors	comparison	accuracy	aliasing	errors

Scheme	R2012
Semester	VII
Course Code	CPC702
Course Name	Cryprography and System Security
Question No.	Answer-Key
1	a
2	c
3	c
4	d
5	c
6	b
7	a
8	d
9	d
10	a
11	b
12	b
13	a
14	a
15	c
16	c
17	b
18	d
19	b
20	c
21	b
22	c
23	a
24	d
25	c

Scheme	R2012
Semester	VII
Course Code	CPC702
Course Name	Cryprography and System Security

Question No.	Question	a	b	c	d
1	A property that makes relationship	Confusion	Diffusion	Block Cipher	Stream Cipher
2	Steganography is the example of	image processing	authentication	covert channel	data channel
3	Lack of Integrity in a system leads to -	Database hacking	Data deletion	Data tampering	Data leakage
4	_____ means selecting and continuously	Encipherment	Authentication	Notarization	Routing Control
5	_____ attacks are in the nature of	Active	Risky	Passive	Controlled
6	Use Vigenere cipher with key “HACK” to	ZFEEYJVI	ZEEEYIVI	ZBEFYJVJ	ZEEEZIVI
7	In multiplicative cipher the formula used to	(M*K)mod 26	(M*K-1)mod 26	(M*K)/26	(M*k-1) *26
8	Use Play fair cipher to encrypt the message	LTUGEGAFRATG	LTUGEGZTRAHF	LTUGEGGFRA	LTUGEGAFRAHF
9	Find the multiplicative inverse of 4 in Z10	5	6	4	there is no
10	Input block size of plaintext for DES is	64 bits block,16	128 bits block,16	16 bits block,64	64 bits block,20
11	In DES algorithm if the input to S-box is	row 2,column 3	row 3, column 1	row 17, column 1	row 8, column 3
12	In the DES algorithm Round Input is of	48, 32	32,48	56, 24	32, 32
13	If Φ (n) is 1012 where p & q are greater	p=23,q=47	p=22,q=46	p=24,q=48	p=44,q=23
14	Diffie Hellman is a	Key exchange	Digital Signing	Symmetric key	Hash
15	Digital Signature is _____	encryption with	encryption with	encryption with	encryption with
16	_____ method of authentication,	digital signature	Kerberos	challenge	encryption
17	Which protocol uses Ticket Granting Ticket	Buffer overflow	Kerberos	MD5	RSA
18	_____ provides confidentiality and	SSL	MD5	Firewall	PGP
19	The Mesh based model is used for	When the roots of	When the roots of	When there is no	When there are
20	In cryptography, _____ is a standard defining the format of public key certificates.	X.501	X.511	X.509	X.500
21	Program activated on an infected machine that is activated to launch attacks on other machines	Key logger	Zombie	Spammer	Trapdoor
22	A _____ attack happens when a computing system that's designed to handle tasks in a specific sequence is forced to perform two or more operations simultaneously	Incomplete mediation	Buffer overflow	race condition	salami attack
23	Buffer overflow attack is possible on ____program	C and C++	Java	Python	Php
24	To hijack a session _____ attack can be performed	IP hacking	IP spooling	IP tracking	IP spoofing
25	Multiple computers & their infrastructure is used in this attack	GoS attack	PoS attack	DDoS attack	DoS attack

Scheme	**R2012**
Semester	VII
Course Code	CPC703
Course Name	Artificial Intelligence

Question No.	Answer-Key
1	a
2	b
3	a
4	d
5	a
6	a
7	a
8	C
9	a
10	a
11	a
12	d
13	b
14	C
15	b
16	a
17	a
18	a
19	a
20	b
21	b
22	a
23	b
24	a
25	a

Scheme	R2012
Semester	VII
Course Code	CPC703
Course Name	Artificial Intelligence

Question No.	Question	a	b	c	d
1	What is Artificial intelligence?	Making a Machine intelligent	Programming with your own intelligence	Playing a Game	Putting your intelligence into Computer
2	Who is the father of Artificial Intelligence?	Doug Cutting	John McCarthy	William S.	Rasmus Lerdorf
3	Which of the Following Agents have a Condition-Action Rules	Simple Reflex Agent	Model based, goal based Agent	Model based, utility based Agent	Leaning Agent
4	Which of the following is not a component of General Learning Agent ?	Critic	Learning element	Problem Generator	Environment
5	Iterative Depth First Search is derived from	DFS	BFS	Quicksort	Depth limited search
6	8 queens can be formulated in incremental and complete state	yes	no	sometimes	not sure
7	Which search strategy is also called as blind search?	Uninformed search	Informed search	Adversarial search	Local search
8	What algorithm has space complexity O(bd)?	Depth First Search	Bredth First Search	Iterative deeping DFS	None of the above
9	The space complexcity of ____ is better than _____	DFS , BFS	BFS,DFS	BFS,Depth Limited Search	BFS , IDS
10	Figure 1-1 in link shows an 8-puzzle problem with the start state and the goal state. The heuristic function (N) counts the number of tiles (from 1 to 8) that are out of place, now the heuristic value of the start state is: https://drive.google.com/file/d/1rBofVtE08-ezDSyoB-Tsb2ITX1Gr3L0y/view?usp=sharing	5	7	4	2
11	Which form is called as a conjunction of disjunction of literals?	Conjunctive normal form	Disjunctive normal form	Normal form	First normal form

12	A rule of inference is sound if it is based on a tautological implication. Which of the following is NOT a sound rule of inference	P ∧(P → Q) → Q	(P ∧Q) → P	P → (P ∨Q)	Q ∧ (P → Q) → P
13	In CNF, existentially quantified variables are replaced by a ___ .	Recursive function	Skolem function	Objective function	a constant value
14	What type clauses are available in Conjunctive Normal Form?	Disjunction of variables	Conjunction of literals	Disjunction of literals	Conjunction of variables
15	When an inference rule (a1, a2, .. → c) is sound?	When ((a1 or a2 or …….) →c) is a tautology.	When ((a1 and a2 and …….) →c) is a tautology.	When ((a1 and a2 and …….) →c) is a NOT tautology.	When ((not a1) and (not a2) or ……. or c) is a tautology.
16	For a Universal Quantifier in FOPL, ∀xP(x) is read as?	for every value of x, P(x) is true	for at least one value of x, P(x) is true	for some value of x, P(x) is true	for none of the value of x, P(x) is true
17	PROLOG is _____	language	syntax	semantic	None of the mentioned
18	Expert system have _____engine	inference	knowledge	goal function	profit
19	Automated vehicle is an example of _____	Supervised learning	Unsupervised learning	Active learning	Reinforcement learning
20	but specifies an ordering between actions only where	Linear Order	Partial order	Total order	Unordered
21	_____with many parameters.	Linear Functions	Nonlinear Functions	Discrete Functions	Exponential Functions
22	search?	search	Hill-climbing search	Depth-first search	Breadth-first search
23	First phase in NLP is _____ .		lexical Analysis	Syntax Analysis	Discourse integration
24	Which of the below is NOT NLP use case?	Fingerprint Biometric	Text Summarization	Question Answering	Voice recognition
25	_____ is regarded as brain of an Expert System.	Inference Engine	User Interface	Knowledge Base	End User

Course code **CPE7021**
Course **Advanced Algorithms**
Scheme **R2012**

Q. No.	Question No.	Answer-Key
1	1	A(n) = O(W(n))
2	2	Theta (n^2)
3	3	n^3 / (sqrt(n))
4	4	Red
5	5	Rotate z.grandparent in opposite direction of z & recolor parent and grandaparent.
6	6	Recolor Parent and Sibling and double black becomes single black node.
7	7	Double Black Node has Black Parent, Black Sibling with black children
8	8	10X20X40
9	9	O(n^2)
10	10	Prim's Algorithm
11	11	Bellman Ford Algorithm
12	12	O(ElogV)
13	13	Relax
14	14	Johnson's Algorithm
15	15	Minimum Cut
16	16	Skew symmetry
17	17	Never
18	18	Relabel
19	19	Non-negativity Constraint
20	20	no contribution in objective function
21	21	Net Profit
22	22	Divide and Conquer
23	23	Quick hull problem
24	24	O(N log N) & O(N^2)
25	25	Euclidean distance

Course code **CPE7021**
Course **Advanced Algorithms**
Scheme **R2012**

Q. No.	Module No.	Question		Option1 (a)	Option2 (b)	Option3 (c)	Option4 (d)
1	1	Assume that w(n) and A(n) denote the worst case and average case running time of an algorithm respectively, executed on an input of size n. Which of the following is always true?		A(n) = Omega(w(n))	A(n) = Theta(w(n))	A(n) = O(W(n))	A(n) = o(W(n))

2	1	What is the time complexity of fun()?
		int fun(int n)
		{
		int count = 0;
		for (int i = 0; i < n; i++)
		for (int j = i; j > 0; j--)
		count = count + 1;
		return count;
		}
				Theta (n)	Theta (n^2)	Theta (n*Logn)	Theta (nLognLogn)

3	1	Which of the following is not O(n^2)?		(15^10) * n + 12099	n^1.98	n^3 / (sqrt(n))	(2^20) * n
4	2	When a node is first inserted in a red-black tree, it is placed according to the insert procedure in a binary search tree. What color is this newly inserted node (initially) ?		Red	Black	Either Red or Black	It has no color
5	2	If u have a tree with 20(Root Node, black), 15(left child of 20,red) and 5(left child of 15, red) which rule will you apply to balance the RBT?		Rotate z.grandparent in opposite direction of z	Recolor parent, grandparent and uncle	Rotate z.parent in opposite direction of z	Rotate z.grandparent in same direction of z
6	2	Solution to a case where double black node has red parent is ?		Recolor Parent and Sibling	Recolor Parent and Sibling and double black becomes single black node.	Rotate parent in opposite direction	Left rotation on sibling
7	2	Identify the scenario when double black property is pushed up & sibling becomes red ?		Root Node is Double Black	Double Black Node has Red Parent	Double Black Node has Black Parent, Black Sibling with black children	Double Black Node has Red Sibling
8	3	Let there be two matrices P and Q which are 10 x 20 and 20 x 40 matrices respectively. What is the number of multiplications required to multiply the two matrices?		10X20	20X40	10X20X40X20	10X20X40
9	3	Specify the time complexity of the following dynamic programming implementation of the rod cutting problem?		O(1)	O(n)	O(n^2)	O(logn)
10	4	Dijkstra's Algorithm is very similar to which algorithm ?		Prim's Algorithm	Kruskal's Algorithm	Floyd Warshall Algorithm	Ford Fulkerson Algorithm

11	4	Single source shortest path problem on a graph having negative weights can be solved using which algorithm?		Prim's Algorithm	Dijkstra's Algorithm	Bellman Ford Algorithm	Floyd Warshall Algorithm
12	4	Specify the time complexity of Dijkstra's algorithm using binary min-heap method?		O(V)	O(VlogV)	O(E)	O(ElogV)
13	4	Procedure used to update the costs of all the vertices V, connected to a vertex U to get the shortest path?		Relax	Intialization	Costing	Overlapping Subproblems
14	4	Identify the algorithm in which Bellman Ford Algorithm is called once and Dijkstra called V times.		Prim's Algorithm	Kruskal's Algorithm	Floyd Warshall Algorithm	Johnson's Algorithm
15	5	Bottle neck capacity in a flow network is also called as?		Minimum Cut	Residual Capacity	Maximum Cut	Original Capacity
16	5	In a flow network, The net flow from u to v must be the opposite of the net flow from v to u i.e. f(u,v)=−f(v,u). What is the property called?		Residual Capacity	Skew symmetry	Flow Conservation	Capacity Constraint
17	5	Does the flow conservation property stand true for source and sink node ?		Always	Never	Depends on Capacity constraint	Only if Minimum cut is 4
18	5	Flow network operation in which you increase height of the vertex when none of its adjacent is at lower height is called?		Push	Augmented Path	Relabel	Residual Flow
19	6	Which constraint should be satisfied by the feasible basic solution in the simplex method ?		Non-negativity Constraint	Negative constraint	Basic constraint	Common constraint
20	6	What is the reason behind assigning zero coefficients to slack variables in the simplex method ?		high contribution in objective function	divisor contribution in objective function	base contribution in objective function	no contribution in objective function
21	6	What is "Cj - Zj" row in a Simplex table for maximization represents ?		Profit per unit	Gross Profit	Net Profit	Constraints
22	7	Which is the optimal approach to solve closest pair of points problem?		Divide and Conquer	Dynamic Programming	Greedy Strategy	Backtracking
23	7	Select the appropriate method from the given options where you construct a smallest polygon out of n given points?		Closest pair problem	Quick hull problem	union-by-rank	path compression
24	7	Specify the average case and worst case time complexity of convex hull algorithm ?		O(N log N) & O(N^2)	O(log N) & O(N^2)	O(N) & O(N^2)	O(1) & O(N^2)
25	7	Select the basic operation used in closest pair algorithm using brute force approach?		Manhattan distance	Euclidean distance	Heuristic distance	Chebyshev distance

Scheme	R2012
Semester	VII
Course Code	CPE7023
Course Name	Image Processing

Question No.	Answer-Key
1	(x+1, y), (x-1, y), (x, y+1), (x, y-1), (x+1, y+1), (x+1, y-1), (x-1, y+1), (x-1, y-1)
2	A circle centered at P
3	3072
4	If q is in N4(p) OR q is in ND(p) and the set N4 (p) ∩ N4 (q) has no pixels whose values are from V
5	No Change on histogram
6	15
7	pixel positions
8	convolution
9	Horizontal line detection
10	second order derivative filter
11	high pass filters
12	nonlinear operation
13	horizontal lines
14	It detects multiple pixel thick edge
15	8x8
16	Multiplication of DFTs of two sequences
17	-2-2j
18	Finite discrete sequences
19	Wavelet
20	Arithmetic redundancy
21	Quantizer
22	Quantization of DCT components
23	subimage
24	dilation followed by erosion
25	Thining

Scheme	R2012
Semester	VII
Course Code	CPE7023
Course Name	Image Processing

Question No.	Question	Option-1	Option-2	Option-3	Option-4
1	What is the set of pixels of 8-neighbors of pixel p at coordinates (x, y)?	(x+1, y), (x-1, y), (x, y+1), (x, y-1), (x+2, y), (x-2, y), (x, y+2), (x, y-2)	(x+1, y), (x-1, y), (x, y+1), (x, y-1), (x+1, y+1), (x+1, y-1), (x-1, y+1), (x-1, y-1)	(x+1, y+1), (x+1, y-1), (x-1, y+1), (x-1, y-1), (x+2, y+2), (x+2, y-2), (x-2, y+2), (x-2, y-2)	(x+2, y), (x-2, y), (x, y+2), (x, y-2), (x+2, y+2), (x+2, y-2), (x-2, y+2), (x-2, y-2)
2	All the pixels at Euclidean distance of r from given pixel P form	A circle centered at P	A square centered at P	A triangle centered at P	A rectangle centered at P
3	In digital image of M rows and N columns and L discrete gray levels, calculate the bits required to store a digitized image for M=N=32 and L=8.	16384	4096	8192	3072
4	Two pixels p and q having gray values from V, the set of gray-level values used to define adjacency, are m-adjacent if:	If q is in N4(p) OR q is in ND(p) and the set N4 (p) ∩ N4 (q) has no pixels whose values are from V	If q is in N8 (p) OR q is in ND (p) and the set N8 (p) ∩ N8 (q) has no pixels whose values are from V	If q is in N4 (p) OR q is in ND (p) and the set N4(p) ∩ N4 (q) has pixels whose values are from V	If q is in N8 (p) OR q is in ND (p) and the set N8 (p) ∩ N8 (q) has pixels whose values are from V
5	What is the effect of equalizing an already equalized histogram?	Number grey levels reduced	No Change on histogram	Number grey levels increased	New grey levels gets added
6	Result of application of thresholding operation with T=3 at a pixel p with gray value 5 of an 4 bpp is	15	7	255	0
7	Histogram does not depend on	pixel positions	brightness	pixel values	type of image
8	Spatial Filtering is a ----- process	correlation	convolution	amplification	subtraction
9	State the purpose of the given mask -1 -1 -1 2 2 2 -1 -1 -1	Horizontal line detection	45 degree line detection	(-45) degree line detectio	Vertical line detection
10	Laplacian is a	First order derivative filter	three order derivative filter	second order derivative filter	Four order derivative filter
11	Sharpening Filters are	LPF	high pass filters	median filters	isotropic
12	Median filtering is a	nonlinear operation	addition	mean	maximum
13	The horizontal line detection mask gives very strong response for	horizontal lines	vertical lines	lines at 45 degrees	lines at -45 degrees
14	Which one of the following is limitation of Gradient edge detector?	It detects double edges	It detects single pixel thick edge	It detects multiple pixel thick edge	It doesn't work well with sharp edges
15	Before applying DCT an image is normally divided in to blocks of size:	4x4	8x8	16x16	256x256
16	The circular convolution of two sequences in time domain is equivalent to	Summation of DFTs of two sequences	Difference of DFTs of two sequences	Square of multiplication of DFTs of two sequences	Multiplication of DFTs of two sequences
17	If X(K) = {10, -2+2j, -2, _____} is 4 point DFT of x(n) then the fourth component is	-2+2j	-2-2j	-2	2
18	DFT is applied to	Infinite sequences	Finite discrete sequences	Continuous infinite signals	Continuous finite sequences
19	Which image transform has high energy compaction property:	Hadamard	Fourier	Wavelet	Cosine
20	Which one of the following is not a type of redundancy in image representation?	Psychovisual redundancy	Arithmetic redundancy	Coding redundancy	interpixel redundancy
21	Which one of the following must not be part of image compression model when lossless compression is desired?	Quantizer	Symbol Encoder	Symbol Decoder	Mapper

22	Which of the following steps reduces psychovisual redundancy in Trasform coding method?	Dividing image into blocks of size 8X8	Taking DCT of each block of size 8X8	zigzag reordering	Quantization of DCT components
23	Structuring element is also called	pixels	lines	subimage	noise
24	Closing operation is	dilation followed by erosion	erosion followed by dilation	erosion followed by erosion	dilation followed by dilation
25	In which morphological operation boundary of the object is subtracted from the object	Opening	Closing	Thickening	Thining

Scheme	**R2012**
Semester	VII
Course Code	**CPE7024**
Course Name	Software Architecture

Question No.	Answer-Key
1	It is a division of functionality together with data flow between the pieces
2	Client and server is an architectural style
3	Process Structure
4	Performance
5	Denial Service & IP source address spoofing
6	A dynamic structure requires a simulator to perform analysis
7	The architect should have the technical requirements for the system and an articulated and prioritized list of qualitative properties
8	An architecture is foremost an abstraction of a system that suppresses details of the components that do not affect how they are used
9	All the system to be stable should posses an architecture
10	Architecture is high level design
11	A set of semantic constraints
12	Main program and subroutine Architecture, Object Oriented or abstract data type system
13	Data Centered Architectures
14	They interact with the environment in limited ways
15	Remote Procedure Call system
16	Mid-Level Design Patterns
17	form
18	Supporting Software Reuse
19	repositories
20	both b and c
21	interface component

22	network architecture
23	OSI reference model
24	Software Product & Engineering Design
25	Analysis occurs at start of product design with a product idea

Scheme	**R2012**
Semester	VII
Course Code	**CPE7024**
Course Name	Software Architecture

Question No.	Question	a	b	c	d
1	What is a Reference Model?	It is a division of functionality together with data flow between the pieces	It is a division of functionality together with data flow between the pieces, It is standard decomposition of a known problem into parts that cooperatively solve a problem	It is a description of component types	It is standard decomposition of a known problem into parts that cooperatively solve a problem
2	Which of the following can be considered regarding client and server?	Client and server is not an architectural style	Client and server is an architectural style	They are set of early design decisions	Client and server may be considered as an architectural style
3	conceptual view?	Module Structure	Process Structure	Uses Structure	Data flow
4	Which of the following factors are discernable by run-time?	Performance	Modifiability	Portability	Integrability
5	Which among the following are the types of threats that are gen	Denial source	Denial source	IP source address spoofing	Denial Service & IP source address spoofing
6	Which of the following is true?	A dynamic structure requires a simulator to perform analysis	A dynamic structure does not requires a simulator to perform any analysis	Connectors transfers data unidirectionaly	none
7	What makes a good architecture?	The architecture may not be	The architect should have the technical requirements for the system and an articulated and prioritized list of qualitative properties	The architecture may not be well documented	An architecture is not dependable on requirements
8	Which of the following are correct statements?	An architecture may or may not defines components	An architecture is not dependable on requirements	An architecture is foremost an abstraction of a system that suppresses details of the components that do not affect how they are used	Architecture an exist independently of its description or specification

9	What does “Every software system has an architecture” implies?	System itself is a component	Architecture an exist independently of its description or specification	All the system to be stable should posses an architecture	is set of constraints on architecture
10	Which of the following is true?	Architecture is low level design	Architecture is mid level d	Architecture is high level design	None of the mentioned
11	Architectural styles is composed of which of the following?	A set of component types tha	A topological layout of these	A set of semantic constraints	Main program and subroutine Architecture
12	Which of the following type has the main goal to achieve Modifiability?	Main program and subroutin	Remote Procedure Call system	Object Oriented or abstract data type system	Main program and subroutine Architecture, Object Oriented or abstract data type system
13	In which of the following style new clients can be added easily?	Data Flow Architecture	Call and Return Architecture	Data Centered Architectures	Remote Procedure Call system
14	What are the advantage of pipe & filters?	They interact with the environment in limited ways	They simplify systems maintenance and enhance its reuse	Interactive applications are encouraged by the style	They return no state information
15	Which of the following type has the main goal to achieve perfor	Main program and subrou	Remote Procedure Call sy	Object Oriented or abstra	Data Centered Architectur
16	Which design pattern focus on the design patterns movement?	Architectural Styles	Mid-Level Design Patterns	Data Structures and Algorithms	Programming Idioms
17	(dynamic) behaviour of the pattern?	name	applications	consequences	form
18	problem domain promotes software reuse and, hence, quality	Communication	Documentation	Efficiency	Reuse
19	development through maintenance in CASE tools?	database	repositories	registers	designs
20	should be based on system	accesibilty	control	data	both b and c
21	component that may need tobe integrated into software	component	database component	interface component	memory msg component
22	connections and interactions of its physical and logical	Computer Architecture	Architecture	Internet Architecture	network architecture
23	The two most important network architecture or reference mode	Layered reference model	OSI reference model	DSL reference model	TCP/IP reference model
24	Software Design consists of _____	Software Product Design	Design	Engineering Design	None of the mentioned
25	process?	of product design with a	end of engineering	resolution produces the	resolution produces the

Scheme	R2012
Semester	VII
Course code	CPE7025
Course Name	Soft Computing

Question No.	Answer-Key
1	Face recognition system.
2	Evolutionary Computing
3	classes are predefined
4	w1=1,w2=1,T=2.
5	Perceptron has the mechanism to learn.
6	0.2 is effective choice of learning rate.
7	Not linearly separable
8	Kohonen's Self-Organizing Map (SOM)
9	Linearly separable
10	weights are adjusted with respect to difference between desired output and actual output
11	{0.1, 0.5, 0.2, 0.1,0.8}
12	Defuzzified value =70
13	Is a subset of the fuzzy Cartesian product A × B.
14	Defuzzify final output
15	the context of the application
16	Restricted scalar multiplication
17	antecedent
18	network are needed
19	Auxilary
20	Genetic Algorithm
21	Newton's method
22	Permutation encoding
23	initial population->fitness calculation->selection->crossover->mutation->new population
24	154326789
25	Roulette wheel

Scheme	R2012
Semester	VII
Course code	CPE7025
Course Name	Soft Computing

Question. No.	Question	a	b
1	Choose from the list the problem that can be solved using soft computing	Square root calculation of polynomial function	Integration calculation problem.
2	Choose the correct techniques used in soft computing.	Evolutionary Computing	Regression technique
3	In supervised learning_____.	classes are not predefined	classes are predefined
4	Implement a single neuron with threshold activation function to simulate working of logical AND gate.Give the correct values of weights and threshold.	w1=1,w2=-1,T=-1	w1=-1,w2=-1,T=-1
5	How is perceptron different from Mc culloch pitts model of neuron?	Perceptron introduced the concept of only binary weights for input.	Perceptron has the mechanism to learn.
6	You ran gradient descent for 20 iterations with learning rate=0.2 and compute cost for each iteration.You observe that cost decreases after each iteration .Based on this which conclusion is more suitable.	0.2 is effective choice of learning rate.	Try larger values of learning rate like 1.
7	The XOR function cannot be realized by a Perceptron because the input patterns are____.	Not bipolar	Not linearly separable
8	Which of the following nets employ unsupervised learning?	Kohonen's Self-Organizing Map (SOM)	Multi layer Perceptron(MLP)
9	Which of the following kinds of classification problems can be solved by a perceptron ?	Linearly separable	Non-linearly separable

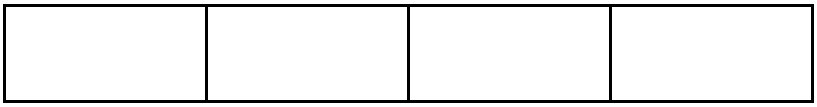
10	In Delta Rule for error minimization_____.	weights are adjusted with respect to change in the output	weights are adjusted with respect to difference between desired output and actual output
11	If C and D are two fuzzy sets with membership functions: μc(χ)={0.2,0.5,0.6,0.1,0.9} μd(χ)={0.1,0.5,0.2,0.7,0.8} then the value of μc ∩ μd will be	{0.1, 0.5, 0.2, 0.1,0.8}	{0.2,0.5,0.6,0.7,0.9}
12	Apply defuzzification on the following: (Link of diagram : https://drive.google.com/file/d/105j4DU42Zau_6mg-7arSWRJCiwAIt7CC/view?usp=sharing)	Defuzzified value =100	Defuzzified value =70
13	A fuzzy relation R between two fuzzy sets A and B_____.	Is a subset of the fuzzy Cartesian product A × B.	Is a union of the fuzzy set A and B.
14	What is the last steps in fuzzy controller system?	Fuzzify the input	Apply implication method
15	The nature of the membership function of a fuzzy set depends on_____.	the type of the application	the context of the application
16	Which of the following is a fuzzification process ?	Alpha-cut decomposition	Restricted scalar multiplication
17	While designing rule in fuzzy controllers ,in case of => operator, the proposition occurring before the “=>” symbol is called	antecedent	consequent
18	What are the limitations of using hybrid systems?	In case of neuro fuzzy systems problem specific membership functions and dataset for neural network are needed.	Capabilities of independent technique is not fully utilised

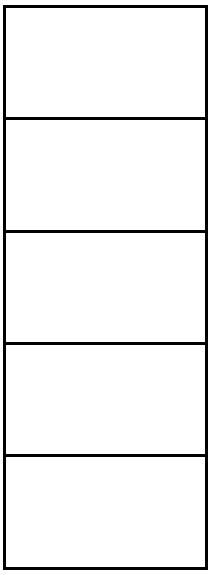
19	Choose the correct class of hybrid systems.	Linear	Parallel
20	Which of the techniques mentioned below fall under derivative free optimization?	Genetic Algorithm	Newton's Method
21	If the second derivatives are easy to compute,which method gives better result.	Newton's method	Steepest Descent
22	Which encoding technique can be used for TSP?	Binary encoding	Value encoding
23	Give the steps of working of Genetic Algorithm.	Fitness calculation->initial population->crossover->mutation->selection->new population	initial population->fitness calculation->selection->crossover->mutation->new population
24	Perform inverse mutation on highlighted part of following chromosome:chromosome: 1**2345**6789	123456789	6789543210
25	Choose the correct selection operation used in genetic algorithm.	Roulette wheel	Bit swapping

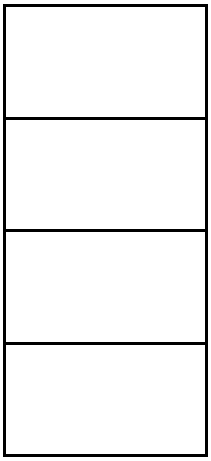
c	d
Finding the shortest path for given problem	Face recognition system.
Aprior approach	Adversarial techniques
classes are not required	classification is not done
w1=1,w2=1,T=2.	w1=-1,w2=1,T=-2
In perceptron inputs are limited to boolean values	Perceptron uses only linear activation functions
0.2 is not an effective choice of learning rate.	The model is overfitting.
Discrete	Linearly seperable
Backpropogation	Adaline
Fully solvable	Partially solvable

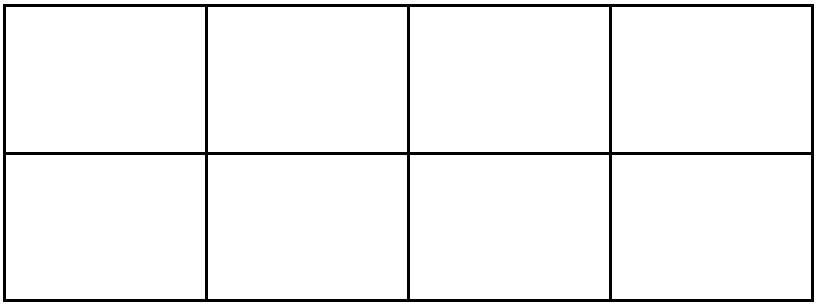
weights are adjusted with respect to difference between input and output	weights are adjusted with respect to only output
{0.2, 0.5,0.2, 0.1,0.8}	{0.1, 0.5, 0.6, 0.1,0.8}
Defuzzified value =55	Defuzzified value =90.
Is a intersection of the fuzzy set A and B.	Is a complement of union of the fuzzy set A and B.
Defuzzify final output	Perform transformation
the purpose of the application	the difficulty level of application
Controlled Vector Division	Restricted Vector addition
conjunction	disjunction
Combined system requires less computing power	Combined systems are less accurate

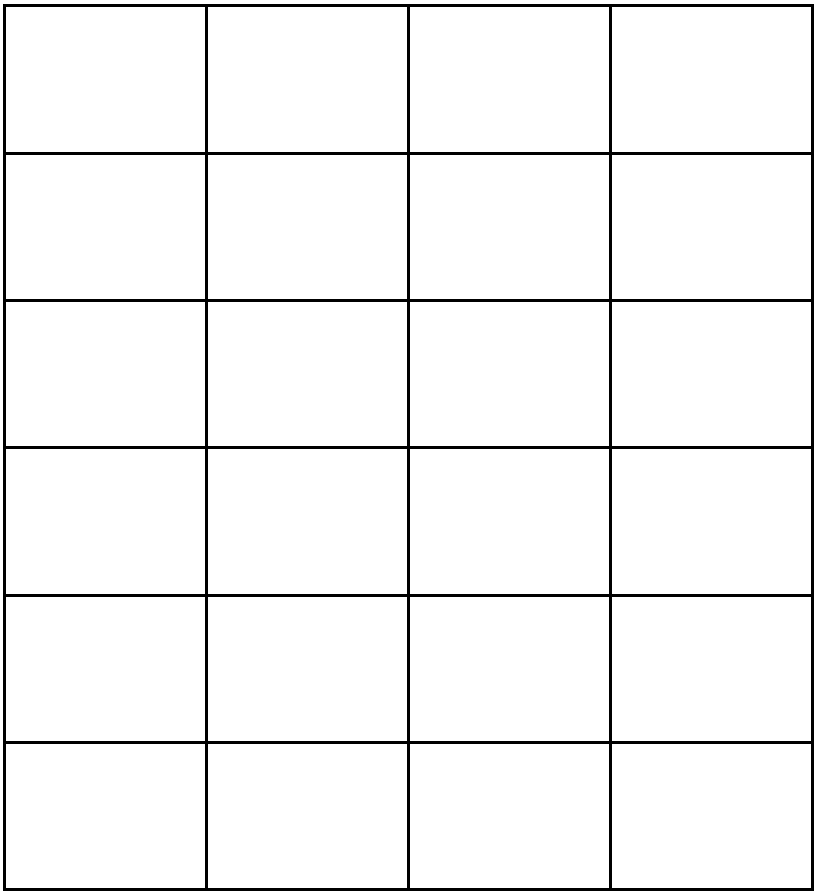
Auxilary	Statistical
Steepest Descent	Gradient descent
Gradient Descen	Stochastic Hill Climbing
Permutation encoding	Tree encoding
initial population->selection->crossover->mutation->fitness calculation->new population	selection->initial population->crossover->mutation->fitness calculation->new population
154326789	123459876
Uniform selection	Permutation technique

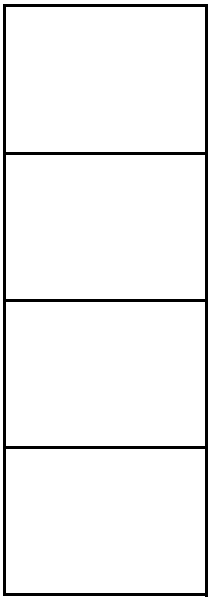


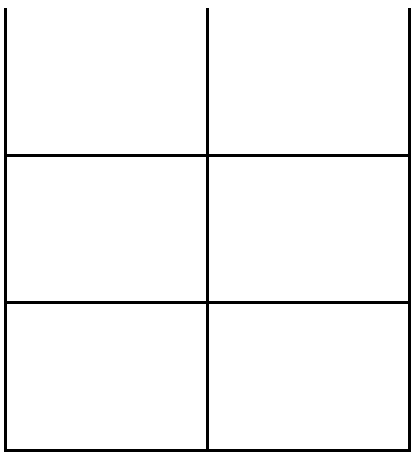


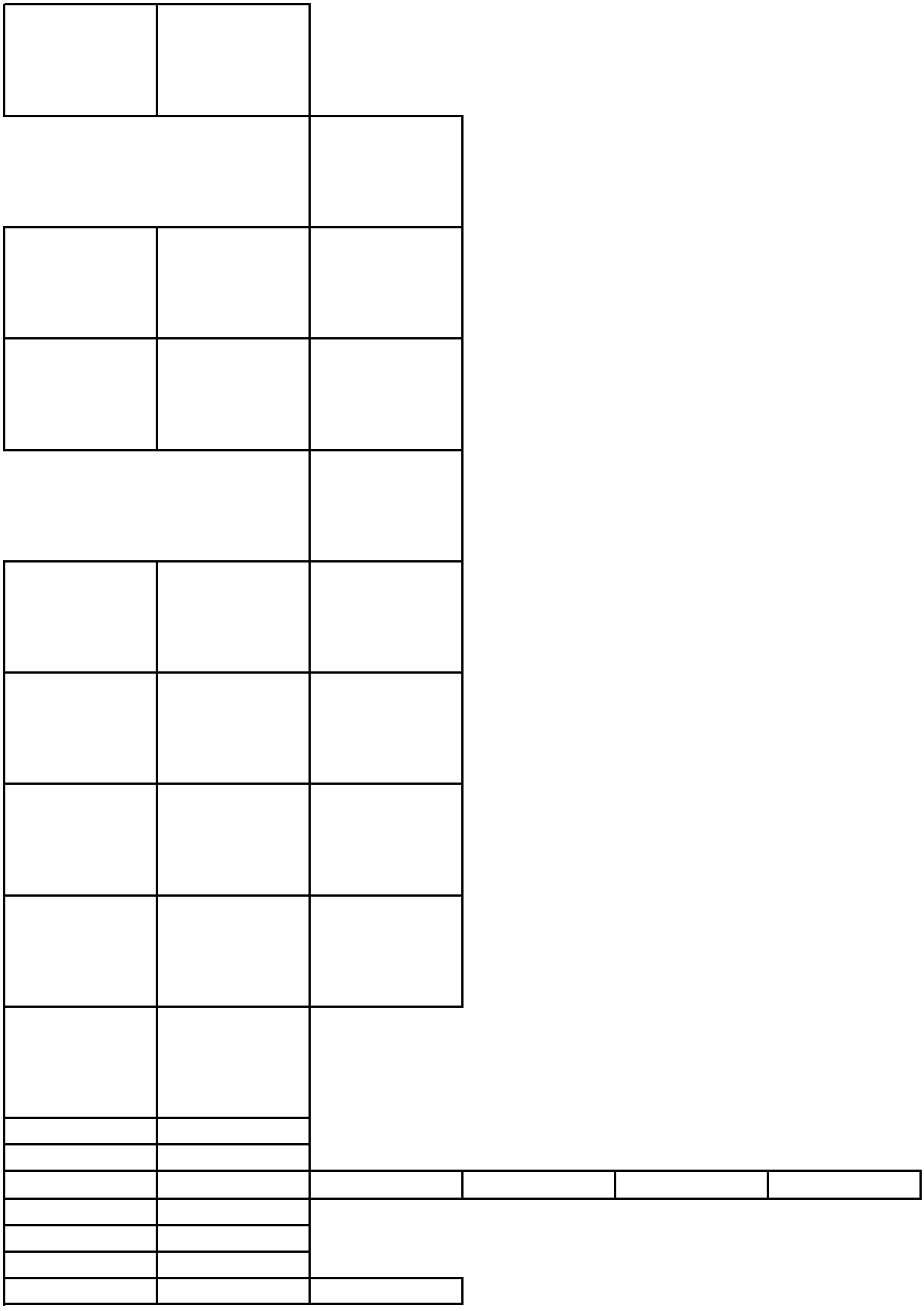












Scheme	**R2012**
Semester	**VII**
Course Code	**CPE7026**
Course Name	**Enterprise Resource Planning and Supply Chain Management**

Question No.	Answer-Key
1	All of the mentioned
2	Middleware
3	It is best to treat ERP as an investment but not as a cost-cutting measure.
4	A client layer and two server layers
5	replacing managerial staff
6	ALL of the mentioned
7	Information
8	strategic information
9	Creation of Integrated Data Model
10	all process stakeholders
11	Barcode
12	5
13	Customers, resellers, partners, suppliers, and distributors
14	a time-phased stock replenishment plan for all levels of a distribution network
15	Purchase requisition from production department
16	Electronic Data Interchange
17	2 & 3
18	Cloud-based ERP
19	EAI
20	Vendor independence, Process integeration
21	The management of resources supplied from an organisation to its customers and intermediaries
22	Supply chain visibility
23	a high level of both demand and supply uncertainty
24	SAP
25	brainstorming.

Scheme	**R2012**			
Semester	**VII**			
Course Code	**CPE7026**			
Course Name	**Enterprise Resource Planning and Supply Chain Management**			
Question No.	**Question**	**a**	**b**	**c**
1	ERP system can be defined as	ERP systems provide a foundation for collaboration between departments	ERP systems enable people in different business areas to communicate	ERP systems have been widely adopted in large organisations to store critical knowledge used to make the decisions that drive the organisation's performance
2	Which types of software, sit in the middle of and provide connectivity between two or more software applications?	Middleware	Enterprise application integration middleware	Automated business process
3	As automation enhances in a process and results in making it more efficient, the optimal way to accomdate ERP for the organization is	It is best to treat ERP as an investment as well as a cost-cutting measure.	It is not best to treat ERP as an investment as well as a cost-cutting measure.	It is best to treat ERP as an disinvestment as well as a cost-cutting measure.
4	Which statement defines the correct structure of the 3 tier architecture in ERP	Three server layers	A client layer and two server layers	Two client layers and one server layer

5	The disadvanatage of business intelligence is?	replacing managerial staff	improved decision making	improved business processes
6	Reverse engineering of data focuses on	Internal data structures	Database structures	ALL of the mentioned
7	Data mining is the process of identifying valid, new, potentially useful, and ultimately clear _____ from databases	Decision	Strategies	Information
8	OLAP is used to transform data warehouse data into _____	reports	strategic information	existing data
9	Which is one of the most important outcome of the ERP implementation?	Creation of Organisational Model	Creation of Integrated Data Model	Creation of Business Model
10	The reengineering team must consider view of _____ in the redesign of a process	all resources	all process stakeholders	existing system
11	Set of parallel printed lines with different thickness of black and white character is called	magnetic code	RFID	Barcode
12	How many packages are selected in pre-selection phase ?	5	7	11
13	Who are the prime users of SCM systems	Sales, marketing, customer service	Accounting, finance, logistics, and production	Customers, resellers, partners, suppliers, and distributors

14	Distribution Resource Planning (DRP) is	a transportation plan to ship materials to warehouses	a time-phased stock replenishment plan for all levels of a distribution network	a shipping plan from a central warehouse to retail warehouses
15	Which one does not belong to the sales & distribution process?	Sales order	Material delivery	Purchase requisition from production department
16	EDI is represented by	Electronic Data Interface	Exchange Data Interchange	Exchange Data Interface
17	Which are the two objectives of JIT approach applied to the organisation. 1. Production system 2. Elimination of Waste 3. Total Employee Involvement 4. Production philosophy	1 & 2	2 & 3	1 & 4
18	_____ is a system of enterprise resource planning software and tools that are hosted and managed offsite in the cloud by the vendor.	Generalist ERP.	Cloud-based ERP	Small Business ERP
19	_____ is the use of technologies and services across an enterprise to enable the integration of software applications and hardware systems.	EAI	ERP	SCM

20	EAI can be used for following purposes	Human Capital Management, SOA	Industry specific portfolios, business solutions	Performance Management, Integeration Support
21	Logistics is an integral part of supply chain management. Which explanation best represents outbound logistics	The management of material resources entering an organisation from its suppliers and other partners	An emphasis on using the supply chain to deliver value to customers who are actively involved in product and service specification	A supply chain that emphasises distribution of a product to passive customers
22	What does a company's information system need to deliver to different parties who need to access the supply chain information of an organisation, whether they be employees, suppliers, logistics service providers or customers?	Supply chain visibility	Password and user name reminders	Radio-frequency identification of products
23	An agile supply chain takes care of	either demand or supply uncertainty	a high level of supply disruptions/uncertainty	a high level of both demand and supply uncertainty
24	ASAP road-map is a detailed project plan by _____ that describes all activities in an implementation	SAP	ORACLE	PeopleSoft
25	New technologies are considered in which phase of re-engineering	planning	implementing.	brainstorming.

d
All of the mentioned
e-business infrastructure
It is best to treat ERP as an investment but not as a cost-cutting measure.
Three client layers

improved operational efficiency
None of the mentioned
Account
tables
Creation of Data Model
legacy system
QR code
More than 15
All of the above

material requirements planning with feedback loop from distribution centers
Billing
Electronic Data Interchange
3 & 4
open source erp
CRM

Vendor independence, Process integeration
The management of resources supplied from an organisation to its customers and intermediaries
None of the above
a high level of demand uncertainty
Baan
training