Roll No.:	19140	78
Page No.	1	

Name of the student:		Signature of the student:
Devarah	Shah	Signature of the student.
Q. No.: 1		
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3) C	at the desired	1 marga at 1
4) d		1 2.11 11.
5) c.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ada en romano
6) 8.	6 / 6	of many the
7) a .	di.	it dead in
8) 6	11. 51.91.	to de dont
9) a		
(0) }		
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Answer Sheet: Online Examination	Roll No.: 1914078 Page No.
Name of the student:	1 age 110. 2
2011	e student:
Q. No.: 1 B	<u>I</u>
7) Cooperative us competitive environment when it competes agent to optimize the or it the game of these kenvironment as the agents each other to win the in the agent is said to be environment when multiple a vironment when multiple a vironment when multiple at the produce the duised in the mode, the with each other to au and reach their destination of the destination of	in a competitive against anothers where with a cooperative which is cooperative agents cooperate
	d (6°
	41
-	

Answer Sheet: Online Examination	Roll No.:	1914	578
Samuel Banking	Page No.	3	

Name of the student:	
Devansh Shah	Signature of the student:
Q. No.: 1	
$\overline{\mathbb{G}}$	
2) The pros and cons	of backtracking are:
Pros	·
of Dochsterlein can	almost solve any
i) All evicting solut	s boute force nature
id All evicting solut	ions can be found
out for problem	Corpe at and
E Cons	rict part of
1) Very Slow 00 1) Computational cost	uses brute force
in Computational cost	is very high so
it se pomissives	and even after the
search might no depending on data	t find the soln
de pordira on data	
U CIP OF COLUMN	
1:	prilant F (
1:	en toda e T (
1: 1 1 1 1 1 1	C M C C
1: 1 1 1 1 1 1	C M C C
3):) Alpha - Beta pouning version of min max	is a modified algorithm and is
3):) Alpha - Beta pouning version of min max an optimization ter	is a modified algorithm and is higue for min max
3):) Alpha - Beta pouning version of min max en optimization ter also.	is a modified algorithm and is hosque for min max
3):) Alpha - Beta pouning version of min max en optimization ter also. ii) Pouning is a ted	is a modified algorithm and is haique for min max haique in which we arrive to min max decision
3):) Alpha i Beta pouning version of min max can optimization ter also a ted can compute the compute the control of the contro	is a modified algorithm and is horique for min max horique in which we extend min max decision taking the decision
3):) Alpha is Beta pouning version of min max can optimization ten also. ii) Pouning is a ted con compute the con by calculating and to split the tree	is a modified agorithm and is higue for min max harique in which we protect min max decision taking the decision at respective pruning
3):) Alpha is Beta pouning version of min max can optimization ten also. ii) Pouning is a ted con compute the con by calculating and to split the tree	is a modified agorithm and is higue for min max harique in which we protect min max decision taking the decision at respective pruning
3):) Alpha - Beta pouning version of min max on optimization ter algo. ii) Pouning is a ted con compute the con by calculating and to split the tree hode. This technique	is a modified algorithm and is higue for min max higue in which we be seet min max decision taking the decision at respective prunning requires special
3):) Alpha - Beta pouning version of min max on optimization ter algo. ii) Pouning is a ted con compute the con by calculating and to split the tree hode. This technique	is a modified algorithm and is higue for min max higue in which we be seet min max decision taking the decision at respective prunning requires special
3):) Alpha - Beta pouning version of min max on optimization ter algo. ii) Pouning is a ted con compute the con by calculating and to split the tree hode. This technique	is a modified algorithm and is higue for min max higue in which we be seet min max decision taking the decision at respective prunning requires special
3):) Alpha - Beta pouning version of min max on optimization ter algo. ii) Pouning is a ted con compute the con by calculating and to split the tree hode. This technique	is a modified algorithm and is higue for min max higue in which we be seet min max decision taking the decision at respective prunning requires special
3):) Alpha is Beta pouning version of min max can optimization ten also. ii) Pouning is a ted con compute the con by calculating and to split the tree	is a modified algorithm and is higue for min max higue in which we be seet min max decision taking the decision at respective prunning requires special

Answer Sheet: Onlin	ne Examination	Roll No.:	1914078
		Page No.	4
Name of the student:			9
Devansh Shah	Signature of the	student:	zelulz.
Q. No.:		-	
appha is - 00	initial	volve	of
			<u>a</u>
Silvered by	" ex 200	of du	21 40
Solvated bias", bis that a model's prom the langest the training data. The training data. The training data. The assert resures used in traget functions of selection selection. The selection resures assertions of selection.	as to	the di	anount
from the larged	valie	Compase	ters.
ii) Bras exerx room			to the
assumptions used in	a l	model	slifying the
taget functions o	tre eas	ier to	approximation
, selection	tooduced	by	model
Resampling con a data is the processamples from a get more accurate	ffect h	40 40	max also
Samola is the prov	ess of	extra	cting new
get mose accitate	dataset	in	order to
	1001	3-1	
ase used ase	those p	ro cedure	1 which
human like intelligen	compute	25 to	Show
A i techniques ase ase used to enable human like intelliger The various A I fee intelliger is Natural language or	chriques	as i	
" Natural language or	2122916		(1)

larguage, processing

Automated reasoning

Lompiter Vision

Answer Sheet: Onl	
	Page No. 5
Name of the student:	
Devansh Shah	Signature of the student:
Q. No.: 2	2
1) We have to solve	e I for! . I
E A T	100
+ T H A T	1 /1 /7 /
APPLE	
	and to reful that the
+ 11 11 11 11	$\frac{1}{1}$
	11/8/
Cal. 1: (1.02	L111111
Solution Steps	E - 1911.1 11 11
> As the sum (Apple)	las 1 exten digit
than the words ad	ded (fA)? and THAZ
and all letters as	have values be theen
THE MOXIM	entra letter
	w. A.
+ 1] - 1	A = 1 everywhere
> Fatsa letter of 2'no	Wood 7 ias 9
as max carry poss	ible is I and
also need to gene	sorte carry for
be only once be not	tilled 36 9 will
also need to generalleHex A we just be only possible nor larry	mor will generally
· · · · ·	
1 0 1	

a destroit	Answer Sheet: Online Examination	Page No. 6
Name of the student:	1	
Devansh	Shah Signature of	the student: The students
Q. No.:		Ç
+ 1 9		7 A H I = 3 J 19 9 A
-> last lester 9+9=18	of sun (Ein and	A LUCH L. P
- ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	18 [] [9]] [] [8]	11111 1012 and 102
+) Now 14	171 = 3 = L	due 11 = 1 6.
4 1	18119	1 11.
		1 08 4
Carry C	7) + 1 carry = 10	sum/=P.
1	8 11 11	
+ 19	0 3 8	PIEO
→ H=2 w		8 y E = 3 A = 1
10 (0 0 0 W	P=0, L=3

Somaiya Vidyavihar University 1914078 Roll No.: Answer Sheet: Online Examination Page No. Name of the student: Devonsh Shah Signature of the student: Q. No.: 2 Groced BFS algorithm A* algorithm cost h(n) to goal rode minimizing the total

It uses evaluation fore cost as it uses

f(n) = h(n) which is fln) = g(n) + h(n) which

her distinct are estimate cost is travelled distance + to goal predicted distance get stuck in loops are infinitely many nodes Time complexity 0 (bm) - expanential time complexity Space complexity O(bm) - keeps all nodes, in memory -> 0 (bd) - not optimal as obtains best first solution - optimal depending upon search algo and heuristic boobergh - Uses more memory. uses less memory b: blanching factor

m: maximum depth of state space

d: depth of least cost solution

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Page No.	8

	Name of the student:	
	Devansh Shah	Signature of the student:
Q	. No.:	
	Converting into First	<u>-</u>
<u>a</u>	There is a borny (x)	who is a whe. 15 (whe (x)
P	Every child who	has a UNO cased is
	> Hory Ischild (x) A	is (ool (z) ~
c	beryone of Mumbri)	is smart (x)
d)	Blue detabases as	e better than other A Database (y) A is Blue (2) Better (2, y)
-	A PisBlue by	A Database (y) A is Blue (3) SENT is Better (2, y)
e) The best Grose higher than best	in A12 is always tetter score in A11
- >	H semester Ixty score	(x, A12, semestes) y, A11, semester)

Answer Sheet: Online Examination	Roll No.: 1914078
Name of the student:	Page No. 9
Da 10 6	student: Joshuh
Q. No.: 3	
2) Rayer Magazia	
of ocenstance of ocea cribes	the probability
to any condition ?!	ent related
2) Bayes theorem describes of occurrance of an ev to any condition. It is for the case of condition	also considered
The bold of the second of the second	become uty.
The bayes theorem is expo	essed in the
following formula:	
$P(A B) = P(B A) \cdot P(A)$	h 7 / 1
P(B)	1 7 195
I will be to the set	1 1
where P(AIB) -> the probability	of event A
occuring given	the event
P(BIA) -> the probability	
o cursing given	ty of event B
has occibed	event H
P(A) -> Drobobility of	event A
P (B) 100 bability of	event B 1
	1
Hypothesis - Evidence	Overdouse Ober
likely hood of Kypothesis	evidence given
P(AIB) = P(B/A) P(A).	Posos probability of hypothesis
P (B)	of hypothesis
d hypothesis given	1
	for malizing constant
evidence.	

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Page No.	0	

Name of the student:	
Devansh Sheet	Signature of the student:
Q. No.:	
	V. I. S. C. C. C.
Let as now take	an example.
Bag & contains 4	while and 6 black balls
Bag 2 contains 5	white and 3 daily Lally
One hall to drive	white and 3 black balls . at random from one
ol- Ha has	Jan 1006
of the begs and	is found to be black.
proportity of	it being abown from
bag 1.	- Charles Towns Control of
Let E, be event of E, be event of A be the event	Thomastra book 4
2	1
2 be even b	the choosing bag L
h be the we	ent of drawing black ball
	- 01.
P(E,) = P(E2) = /	2
	O.
P(A/F,) = P(drawing = 6/10	Hade from hos 1)
- //16) 300 1
- 0/10	
- 310	
	A = A = A = A = A = A = A = A = A = A =
P(A/E2) = 3/7	(4)
	,
By bayes theorem	012/17 11 11 0
J. Leges I. Color	.,
0 (5 14)	
P(E(/A) = P(E1), P!	(A/ E)
P-(-E ₁)-8-(A	(E) + P(E2) (P(A/E2))
demand of the second	Tell Circuit Control
= ½ x 3	3/5 = 17
1 × 3 + 1	73
Then 12 5	7 may furthern 1

	Online Examination	Roll No.: 19140 78 Page No. 11		
Name of the student: Devansh Shah	Signature of the	student:		
Q. No.: 4				
1) Variance error				
Variance extor is the variation of scores caused by the influence of variables which are other than the independent				
which are other than the independent variables in our data. ii) It is coused by external factors like imprecision in measurement. It indicates				
imprecision in measurement. It indicates like how much random fluctuation is exprected in It can be in credibly difficult to autually try and looked				
iii) It can be in creed	libly dif	ficult to entually we such factors		
High variance models		model,		
i) known as over filling	Known	as under filting		
is) tries to completely fit the data	cannot tourning	model the data		
external fectors of training set.	unable given	to leasn the datasel (training)		
training set.	at all			
(v) New data can be generalized but less	connot	be generalized		
performance	lannal	be fixed end		
v) can be fixed in oberision tree by pouring	hence no	ceds to try other		

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Page No. 12

Name of the student:		
Devansh Shah	Signature of the student:	_
Q. No.: 4	append was a Co	,
2) Decision tree is a	structure that solver	_
the problem of ma	chine learning by	_
transforming the del	ta into a tree	₩.
representation. It co	intains nodes and	- 8
the problem of ma transforming the del representation. It co edges and is built	from a dataset.	-
The advantages of I i) Decision tore can	B induction algorithm	<u>/</u>
i) Decision toce can	be used for both	-
i) Under standable pre	regression problems	-
1) Under standable pre	wiction toles we e	- 4
coeated from the	training data.	- 17
coented from the iii) It- does not required iv) Finding leaf hodes to be pruned, hence	vise horman zation	-
ox scaling of our	analla data	- 44
N) Finding lear rodes	made the municipality	- L ove
, of tests.	· Eawarg	DC1
V) Mission data values	do not affect th	
y) Missing data values process of building	a decision tree.	1
and it is bobust	to outliers.	
The dis advan tages of	ID3 induction algor	Thus
1) Overlitting is the pro	blem in decision	
The dis advantages of Duestitting is the protection overfitting, to the protection of high volleading to exposs in high in accuracy.	wrong predictions.	
Due to overfitting,	there's a high	_
chance of high vo	siance in the outpu	t t
leading to exposs in	rival estimation and	
high in accusacy.		
0		

Answer Sheet: Online Examination

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Page No.

Name of the student:	Signature of the student:
Devarsh Shah	Signature of the student:
Q. No.:	,
iii) A small charge cause a large the decision to suita	in the dato can
couse a large	change in the structure
, of the decision t	ree cousing unstability
(v) It is not suita	ble for large
data costs and tra	ining is relatively
expensive as com.	plexity and ring
y) It also takes	higher of time, to train
the model.	10 9561 1550 of (:
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