

**UNIVERSITY OF MUMBAI**  
**T.Y.B.Sc. INFORMATION TECHNOLOGY (Semester V) (Practical Examination)**  
**Second Half 2018**

**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program to implement depth first search algorithm.	20
2.	Write a program to simulate 4-Queen problem.	20
3.	Viva	5
4.	Journal	5

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**Second Half 2018**

**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program to implement breadth first search algorithm.	20
2.	State the water jug problem. Write a program to solve water jug problem.	20
3.	Viva	5
4.	Journal	5

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**Second Half 2018**

**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program to simulate N-Queen problem.	20
2.	Solve travelling salesman problem using artificial intelligence technique.	20
3.	Viva	5
4.	Journal	5

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**Second Half 2018**

**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program to solve tower of Hanoi problem.	20
2.	Solve the block of World problem.	20
3.	Viva	5
4.	Journal	5

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**Second Half 2018**

**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Design the simulation of tic – tac – toe game using min-max algorithm.	20
2.	Solve constraint satisfaction problem. (e.g. Map coloring)	20
3.	Viva	5
4.	Journal	5

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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program to implement alpha beta search.	20
2.	State the water jug problem. Write a program to solve water jug problem.	20
3.	Viva	5
4.	Journal	5

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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Design the simulation of tic – tac – toe game using min-max algorithm.	<b>20</b>
2.	Write a program to solve tower of Hanoi problem.	<b>20</b>
3.	Viva	<b>5</b>
4.	Journal	<b>5</b>

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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program for Hill climbing problem.	<b>20</b>
2.	Write a program which contains three predicates: male, female, parent. Make rules for following family relations: father, mother, grandfather, grandmother, brother, sister, uncle, aunt, nephew and niece, cousin.	<b>20</b>
3.	Viva	<b>5</b>
4.	Journal	<b>5</b>

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Seat No: \_\_\_\_\_

Max. Marks: 50

1.	Write a program to solve Missionaries and Cannibals problem.	20
2.	<p>Write a program to derive the predicate for the following:-</p> <pre> graph TD     A["follower(aristotle, socrates)"] --&gt; B["disciple(aristotle, socrates)"]     A --&gt; C["disciple(aristotle, Z) follower(Z, socrates)"]     B --&gt; D["teacher(socrates, aristotle)"]     D --&gt; E["false"]     C --&gt; F["teacher(Z, aristotle) follower(Z, socrates)"]     F --&gt; G["Z=plato"]     G --&gt; H["follower(plato, socrates)"]     H --&gt; I["disciple(plato, socrates)"]     H --&gt; J["disciple(plato, Z2) follower(Z2, socrates)"]     I --&gt; K["teacher(socrates, plato)"]     K --&gt; L["true"]     J --&gt; M["⋮"]     M --&gt; N["false"]                     </pre>	20
3.	Viva	5
4.	Journal	5

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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

Seat No: \_\_\_\_\_

Max. Marks: 50

1.	Write a program to shuffle Deck of cards.	20
2.	Write a program to solve Missionaries and Cannibals problem.	20
3.	Viva	5
4.	Journal	5

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**Second Half 2018**  
**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program to implement A* algorithm.	20
2.	Write a program to solve tower of Hanoi problem.	20
3.	Viva	5
4.	Journal	5

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**Second Half 2018**  
**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program to implement alpha beta search.	20
2.	Write a program to implement breadth first search algorithm.	20
3.	Viva	5
4.	Journal	5

**UNIVERSITY OF MUMBAI**  
**T.Y.B.Sc. INFORMATION TECHNOLOGY (Semester V) (Practical Examination)**  
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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Design an application to simulate number puzzle problem.	20
2.	Write a program to shuffle Deck of cards.	20
3.	Viva	5
4.	Journal	5

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**Second Half 2018**  
**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program which contains three predicates: male, female, parent. Make rules for following family relations: father, mother, grandfather, grandmother, brother, sister, uncle, aunt, nephew and niece, cousin.	20
2.	Write a program to implement depth first search algorithm.	20
3.	Viva	5
4.	Journal	5

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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program to implement breadth first search algorithm.	20
2.	Write a program to implement A* algorithm.	20
3.	Viva	5
4.	Journal	5

**UNIVERSITY OF MUMBAI**  
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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Derive the expressions based on Distributive law	20
2.	Design an application to simulate number puzzle problem.	20
3.	Viva	5
4.	Journal	5

**UNIVERSITY OF MUMBAI**  
**T.Y.B.Sc. INFORMATION TECHNOLOGY (Semester V) (Practical Examination)**  
**Second Half 2018**

**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Solve traveling salesman problem using artificial intelligence technique.	20
2.	Derive the expressions based on Associative law.	20
3.	Viva	5
4.	Journal	5

**UNIVERSITY OF MUMBAI**  
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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Solve constraint satisfaction problem. (e.g. Map coloring)	20
2.	Solve traveling salesman problem using artificial intelligence technique.	20
3.	Viva	5
4.	Journal	5

**UNIVERSITY OF MUMBAI**  
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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program to solve water jug problem.	20
2.	Solve the block of World problem.	20
3.	Viva	5
4.	Journal	5

**UNIVERSITY OF MUMBAI**  
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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Design the simulation of tic – tac – toe game using min-max algorithm.	20
2.	Write a program to simulate 4-Queen problem.	20
3.	Viva	5
4.	Journal	5

**UNIVERSITY OF MUMBAI**  
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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program to solve Missionaries and Cannibals problem.	20
2.	Solve constraint satisfaction problem. (e.g. Map coloring)	20
3.	Viva	5
4.	Journal	5

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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program to solve tower of Hanoi problem.	20
2.	Write a program to implement breadth first search algorithm.	20
3.	Viva	5
4.	Journal	5



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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Design the simulation of tic – tac – toe game using min-max algorithm.	<b>20</b>
2.	Write a program to solve tower of Hanoi problem.	<b>20</b>
3.	Viva	<b>5</b>
4.	Journal	<b>5</b>

**UNIVERSITY OF MUMBAI**  
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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Write a program to solve tower of Hanoi problem.	<b>20</b>
2.	Design an application to simulate number puzzle problem.	<b>20</b>
3.	Viva	<b>5</b>
4.	Journal	<b>5</b>

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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

**Seat No:** \_\_\_\_\_

**Max. Marks: 50**

1.	Solve constraint satisfaction problem. (e.g. Map coloring)	<b>20</b>
2.	Design the simulation of tic – tac – toe game using min-max algorithm.	<b>20</b>
3.	Viva	<b>5</b>
4.	Journal	<b>5</b>

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Seat No: \_\_\_\_\_

Max. Marks: 50

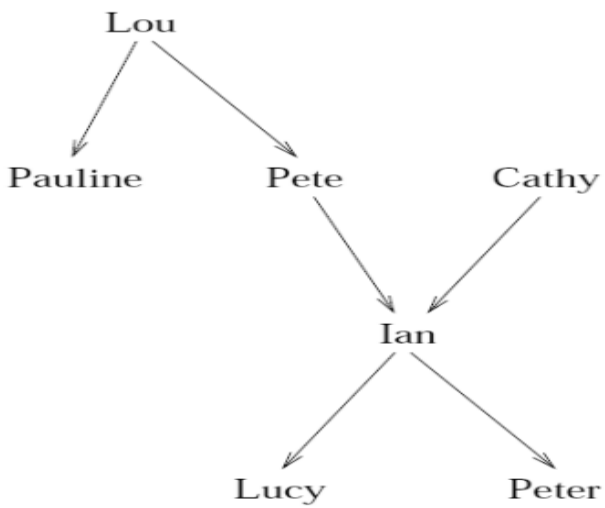
1.	Write a program to solve water jug problem.	20
2.	Design an application to simulate number puzzle problem.	20
3.	Viva	5
4.	Journal	5

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**ARTIFICIAL INTELLIGENCE (USIT5P2)**

Seat No: \_\_\_\_\_

Max. Marks: 50

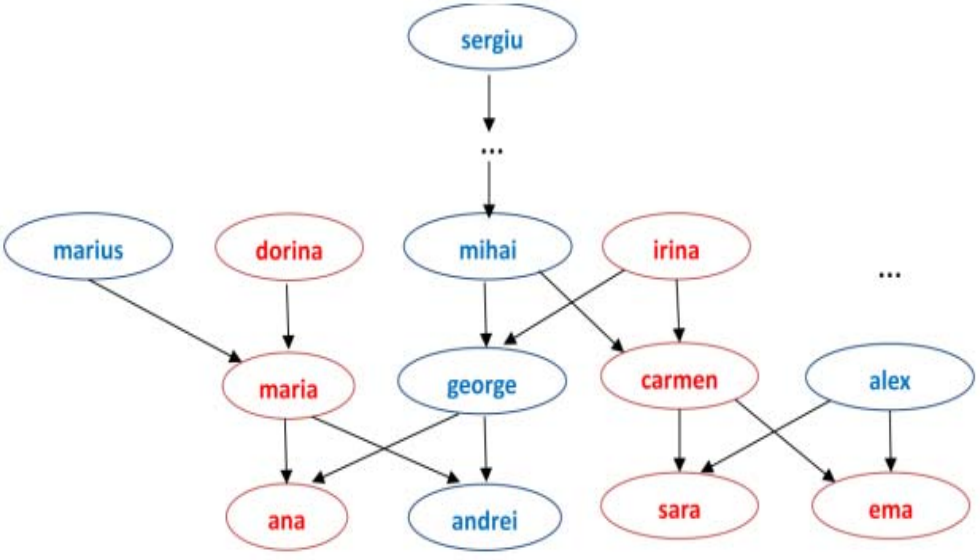
1.	Write a program to derive the predicate for the following:- <div style="text-align: center;"><pre>graph TD; Lou --&gt; Pauline; Lou --&gt; Pete; Pete --&gt; Ian; Cathy --&gt; Ian; Ian --&gt; Lucy; Ian --&gt; Peter;</pre></div>	20
2.	Write a program to simulate 4-Queen problem.	20
3.	Viva	5
4.	Journal	5

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Seat No: \_\_\_\_\_

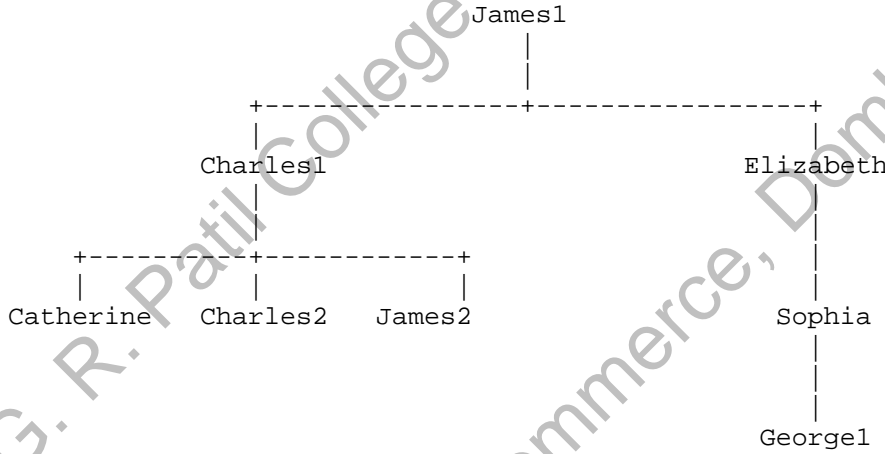
Max. Marks: 50

1.	Write a program to solve water jug problem.	20
2.	<p>Write a program to derive the predicate for the following the genealogy tree. We will define a series of relationships – father, mother, sibling, brother, sister, aunt, uncle, grandmother, grandfather and ancestor.</p> 	20
3.	Viva	5
4.	Journal	5

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Seat No: \_\_\_\_\_

Max. Marks: 50

1.	Write a program to derive the predicate for the following family tree:-  	20
2.	Write a program to implement depth first search algorithm.	20
3.	Viva	5
4.	Journal	5

**UNIVERSITY OF MUMBAI**  
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Seat No: \_\_\_\_\_

Max. Marks: 50

1.	Write a program to implement breadth first search algorithm.	20
2.	Write a program to implement A* algorithm.	20
3.	Viva	5
4.	Journal	5

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