Quiz 1, Aug 24,2016, Set: A

Γ	Ouration:25 mins		-			Ma	ìx.	. Mark			s: 25	
Nam	ne:ID:											
Instr	ructions:											
1.	This question paper contains 2 pages.											
2.	Write your name & ID in the space provided.											
3.	Write the answers in the space provided.											
4.	Overwritten answers will not be considered for rechecks.											
Fill i	in the blanks (1 mark for each blank)											
1.	IBM Watson is a that combines artianalytical software for optimal performance as a question answer.					nce	(AI	.) a	$\mathrm{nd}\ \mathrm{s}$	ophi	isti	icated
2.	A = 0.3/1 + 0.5/2 + 1/3; $B = 0.5/1 + 0.55/2 + 1/3$, then A is a	a				of	В.					
3.	Asimov formulated three laws of											
4.	The first paper on fuzzy sets was published by Professor					_ ir	ւ 19	65.				
	artificial intelligence. is frequently credited for being the Fatl	her o	of tl	1eo	reti	ical	cor	npı	uter	scie	enc	e and
	If the secondary membership function is at its maximum of 1[defined speak of an set.	ined]	at	eve	ery	poi	nt,					
	7. As of June 2016, the fastest supercomputer in the world is the Sunway TaihuLight, with a Linpacl benchmark of 93 PFLOPS, made by the country							npack				
8.	and operators are used for reshaping the men	nber	ship	fu	nct	ions	3.					
	modeling is an area of computer science that deals with simulating human problem solving and mental task processes in a computerized model.											
10.	Fuzyy set shown below according to degree of membership and respectively.	l sha	ape	of	the	e m	eml	ber	ship	fun	nct	ion is
	is a set of algorithms in machine learn rules to follow based on the data researchers feed them.	ing,	wh	erel	by :	mac	hin	.es	figur	e ou	ıt ·	which
12.	Entropy of Crisp set is											
13	If Fuzzy set $A = 0.2/1 + 0.4/2 + 1/3 + 0.6/4$ cardinality of set $A = 0.2/1 + 0.4/2 + 1/3 + 0.6/4$											

1. Given $U = \{1, 2, 3, 4, 5, 6, 7\}$ $A = \{(3, 0.7), (5, 1), (6, 0.8)\}$ then...

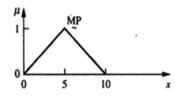
[2 marks]

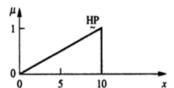
Solution:

 $\tilde{A} =$

2. The base station controls the power output of the mobile. Medium power(MP) and High power (HP) fuzzy set in power control of mobile cellular phone transmitting to its base station are given below. 'x' is in dBm (power ratio in decibels (dB) of the measured power referenced to one milliwatt (mW)). Draw properly labeled diagrams showing intersection of MP & HP, and difference between MP & HP.

[2+2=4 marks]





Solution:

Intersection Difference

3. If A = 0.2/a+0.8/b+0.8/c+0.75/d; B=0.5/a+0.3/b+0.2/c+0.15/d . Find A U B and A BOLDUNION B.

[2+2=4 marks]

Solution:

AUB =

Answer Key for Exam A

Fill in the blanks (1 mark for each blank)

1. supercomputer.

2. subset.

3. Robotics.

4. Lotfi Zadeh.

5. Alan Turing.

6. interval type-2.

7. China.

8. CON, DIL.

9. Cognitive.

10. Normal, Non-Convex.

11. deep learning.

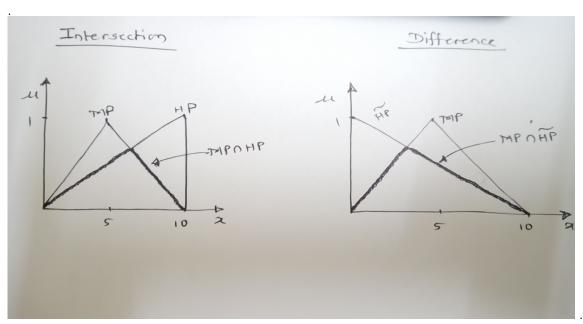
12. zero.

13. 2.2.

Numericals

1. $\tilde{A} = \{(1, 1), (2, 1), (3, 0.3), (4, 1), (6, 0.2), (7, 1)\}$.

2



3. A U B = 0.5/a+0.8/b+0.8/c+0.75/d

A BOLDUNION B = 0.7/a+1/b+1/c+0.9/d.

Quiz 1, Aug 2 Duration:25 mins	24,2016, Set: [B] Max. Marks: 25
Name:	ID:
Instructions:	
1. This question paper contains 2 pages.	
2. Write your name & ID in the space provide	led.
3. Write the answers in the space provided.	
4. Overwritten answers will not be considere	d for rechecks.
Fill in the blanks (1 mark for each blank)	
1 is frequently credited for artificial intelligence.	or being the Father of theoretical computer science and
2 modeling is an area of composition solving and mental task processes in a computer	outer science that deals with simulating human problem ized model.
3. $A = 0.3/1 + 0.5/2 + 1/3$; $B = 0.5/1 + 0.55/2 + 0.5/2 + 0.5/$	- 1/3, then A is a of B.
4 and operators are used for re	shaping the membership functions.
5. IBM Watson is at analytical software for optimal performance as a	hat combines artificial intelligence (AI) and sophisticated question answering machine.
6. If Fuzzy set A = $0.2/1+0.4/2+1/3+0.6/4$, carding	nality of set A=
7. If the secondary membership function is at its m we speak of an set	
8. Entropy of Crisp set is	
9. Fuzyy set shown below according to degree of and res	membership and shape of the membership function is pectively.
10. The first paper on fuzzy sets was published by F	Professor in 1965.
11. Asimov formulated three laws of	<u>_</u> .
12. As of June 2016, the fastest supercomputer in benchmark of 93 PFLOPS, made by the country	the world is the Sunway TaihuLight, with a Linpack
13 is a set of algorithms	in machine learning, whereby machines figure out which

rules to follow based on the data researchers feed them.

1. Given $U = \{1, 2, 3, 4, 5, 6, 7\}$ $A = \{(3, 0.5), (5, 1), (6, 0.7)\}$ then...

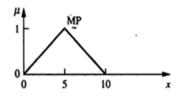
[2 marks]

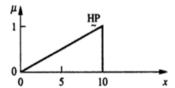
Solution:

 $\tilde{A} =$

2. The base station controls the power output of the mobile. Medium power(MP) and High power (HP) fuzzy set in power control of mobile cellular phone transmitting to its base station are given below. 'x' is in dBm (power ratio in decibels (dB) of the measured power referenced to one milliwatt (mW)). Draw properly labeled diagrams showing intersection of MP & HP, and difference between MP & HP.

[2+2=4 marks]





Solution:

Intersection Difference

3. If A = 0.1/a+0.8/b+1/c+0.75/d; B=0.8/a+0.3/b+0.1/c+0.15/d . Find A U B and A BOLDUNION B.

[2+2=4 marks]

Solution:

AUB =

Answer Key for Exam B

Fill in the blanks (1 mark for each blank)

1. Alan Turing.

2. Cognitive.

3. subset.

4. CON, DIL.

5. supercomputer.

6. 2.2.

7. interval type-2.

8. zero.

9. Normal, Non-Convex.

10. Lotfi Zadeh.

11. Robotics.

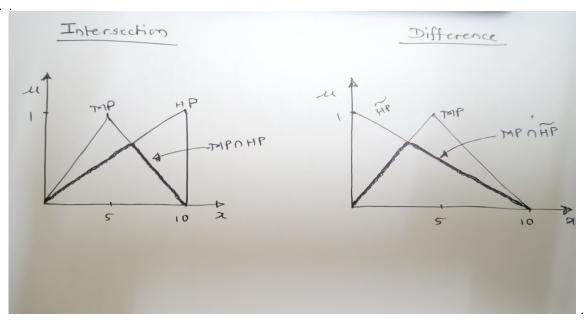
12. China.

13. deep learning.

Numericals

1. $\tilde{A} = \{(1, 1), (2, 1), (3, 0.5), (4, 1), (6, 0.3), (7, 1)\}$.

2



3. A U B = 0.8/a + 0.8/b + 1/c + 0.75/d

A BOLDUNION B = 0.9/a+1/b+1/c+0.9/d.

Quiz 1, Aug 24,2016, Set: C

Duration:25 mins				Ma	x. [War	ks:	25
Name:	ID:							
Instructions:								
1. This question paper contains 2 pages.								
2. Write your name & ID in the space provided	l .							
3. Write the answers in the space provided.								
4. Overwritten answers will not be considered f	or rechecks.							
Fill in the blanks (1 mark for each blank)								
1. Fuzyy set shown below according to degree of me and respec	-	l shape	e of th	ne me	embe	ership) fund	ction is
2. Asimov formulated three laws of								
3. If the secondary membership function is at its maxi we speak of an set.	mum of 1[defi	ned] at	every	7 poin	t,			
4. $A = 0.3/1 + 0.5/2 + 1/3$; $B = 0.5/1 + 0.55/2 + 1/3$	/3, then A is a	ı		_ of E	3.			
5 is a set of algorithms in rules to follow based on the data researchers feed the	machine learn nem.	ing, wł	nereby	macl	nines	figu	re ou	t which
6. If Fuzzy set $A = 0.2/1 + 0.4/2 + 1/3 + 0.6/4$, cardinali	ity of set A=							
7 modeling is an area of computer solving and mental task processes in a computerized		deals	with	simula	ating	g hun	nan p	roblem
8. The first paper on fuzzy sets was published by Prof	essor			in	1965	5.		
9. As of June 2016, the fastest supercomputer in the benchmark of 93 PFLOPS, made by the country		e Sunv	vay T	aihuL	ight,	, wit	h a I	Linpack
10. IBM Watson is a that analytical software for optimal performance as a qu				ence (AI) a	and s	ophis	sticated
11. Entropy of Crisp set is								
12 is frequently credited for lartificial intelligence.	peing the Fath	ner of t	heore	tical o	comp	outer	scier	ice and
13 and operators are used for resha	aping the mem	nbershi	p func	tions.				

1. Given $U = \{1, 2, 3, 4, 5, 6, 7\}$ $A = \{(3, 0.3), (5, 1), (6, 0.8)\}$ then...

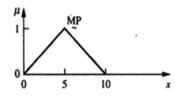
[2 marks]

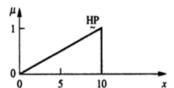
Solution:

 $\tilde{A} =$

2. The base station controls the power output of the mobile. Medium power(MP) and High power (HP) fuzzy set in power control of mobile cellular phone transmitting to its base station are given below. 'x' is in dBm (power ratio in decibels (dB) of the measured power referenced to one milliwatt (mW)). Draw properly labeled diagrams showing intersection of MP & HP, and difference between MP & HP.

[2+2=4 marks]





Solution:

Intersection Difference

3. If A = 0.3/a+0.8/b+0/c+0.75/d; B=0.8/a+0.3/b+1/c+0.15/d . Find A U B and A BOLDUNION B.

[2+2=4 marks]

Solution:

AUB =

Answer Key for Exam C

Fill in the blanks (1 mark for each blank)

1. Normal, Non-Convex.

2. Robotics.

3. interval type-2.

4. subset.

5. deep learning.

6. 2.2.

7. Cognitive.

8. Lotfi Zadeh.

9. China.

10. supercomputer.

11. zero.

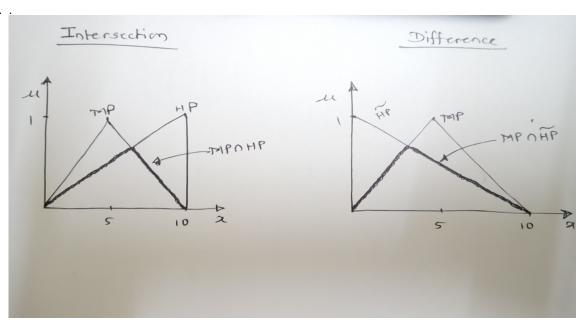
12. Alan Turing.

13. CON, DIL.

Numericals

1. . $\tilde{A} = \{(1,\,1),\,(2,\,1),\,(3,\,0.7),\,(4,\,1),\,(6,\,0.2),\,(7,\,1)\}$.

2



3. A U B = 0.8/a + 0.8/b + 1/c + 0.75/d

A BOLDUNION B = 1/a+1/b+1/c+0.9/d.

Quiz 1, Aug 24,2016, Set: D

Duration:25 m	ins	, ,		Max	. Mar	Iarks: 25			
Name:			_ID:						
Instructions:									
1. This question p	aper contains 2 pages.								
2. Write your nam	ne & ID in the space pr	ovided.							
3. Write the answ	ers in the space provide	ed.							
4. Overwritten an	swers will not be consid	dered for rech	ecks.						
Fill in the blanks (1	mark for each blank)								
	_ modeling is an area of cal task processes in a comp		e that deals wi	ith simulat	ing hum	nan p	roblem		
2. $A = 0.3/1 + 0.5/$	2 + 1/3; B = $0.5/1 + 0.55$	/2 + 1/3, then	A is a	of B.					
	e for optimal performance				I) and s	ophis	ticated		
4. The first paper or	n fuzzy sets was published	by Professor		in 1	965.				
5 and	operators are used for	or reshaping the	membership f	functions.					
6artificial intelliger	is frequently credit ace.	ed for being the	e Father of the	eoretical co	omputer	scien	ce and		
	below according to degree	_	p and shape o	of the men	nbership	func	tion is		
	nembership function is at i		1[defined] at e	very point	,				
9rules to follow bas	is a set of algorithmed on the data researchers	hms in machine feed them.	learning, when	eby machi	nes figur	re out	which		
10. Entropy of Crisp	set is								
11. Asimov formulate	d three laws of	.							
	the fastest supercompute PFLOPS, made by the cou			y TaihuLig	ght, with	ı a L	inpack		

13. If Fuzzy set A = 0.2/1 + 0.4/2 + 1/3 + 0.6/4, cardinality of set A =_____

1. Given $U = \{1, 2, 3, 4, 5, 6, 7\}$ $A = \{(3, 0.6), (5, 1), (6, 0.4)\}$ then...

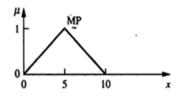
[2 marks]

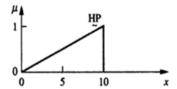
Solution:

 $\tilde{A} =$

2. The base station controls the power output of the mobile. Medium power(MP) and High power (HP) fuzzy set in power control of mobile cellular phone transmitting to its base station are given below. 'x' is in dBm (power ratio in decibels (dB) of the measured power referenced to one milliwatt (mW)). Draw properly labeled diagrams showing intersection of MP & HP, and difference between MP & HP.

[2+2=4 marks]





Solution:

Intersection Difference

3. If A = 0.5/a+0.8/b+1/c+0.75/d; B=0.2/a+0.3/b+0/c+0.15/d . Find A U B and A BOLDUNION B.

[2+2=4 marks]

Solution:

AUB =

Answer Key for Exam D

Fill in the blanks (1 mark for each blank)

1. Cognitive.

2. subset.

3. supercomputer.

4. Lotfi Zadeh.

5. CON, DIL.

6. Alan Turing.

7. Normal, Non-Convex.

8. interval type-2.

9. deep learning.

10. zero.

11. Robotics.

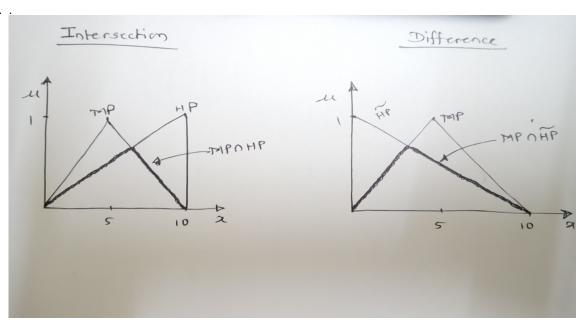
12. China.

13. 2.2.

Numericals

1. $\tilde{A} = \{(1, 1), (2, 1), (3, 0.4), (4, 1), (6, 0.6), (7, 1)\}$.

2



3. A U B = 0.5/a+0.8/b+1/c+0.75/d

A BOLDUNION B = 0.7/a+1/b+1/c+0.9/d.