SET	A

INDIAN SCHOOL MUSCAT
HALF YEARLY EXAMINATION 2023
ARTIFICIAL INTELLIGENCE

(SUB.CODE -417)

CLASS:IX Max.Marks: 50

MARKING SCHEME			
SET	QN. NO	VALUE POINTS	MARKS SPLIT UP
		Section A - objective questions	
	1.	c) Self-confidence	1
	2.	Time management	1
	3.	c) Web camera	1
	4.	Projector	1
	5.	Natural Language Processing	1
	6.	Computer Vision (CV)	1
	7.	Sophia	1
	8.	trained with required information	1
	9.	>>> , .py (1/2 mark each)	1
	10.	Problem scoping	1
	11.	Data Acquisition	1
	12.	b) Problem Statement Template	1
	13.	The 4 Ws of the 4W problem scoping are:	1

		a) Who, What, Where and Why	
	14.	List	1
	15.	Complex	1
	16.	String (str)	1
	17.	Number	1
	18.	Keyword	1
	19.	d) variable	1
	20.	c) dictionary	1
		Section B - Subjective questions	
	21.	a) Self Reinforcement -Self-reinforcement is a process by which individuals control their behavior by rewarding themselves when a certain level of performance has been reached. (1 mark) b) Stress Management-It refers to the ability to manage psychological tension and discomfort due to unforeseen and challenging situations. (1 mark)	2
	22.	• Develop good habits • Overcome bad habits • Motivate to achieve goals in life • Helps to overcome difficult situations (1/2 mark each point)	2
	23.	Central processing unit processes input to produce output based on the instructions given by the user. It is considered as the brain of the computer.(1/2 mark) The CPU is further divided into three parts: a. Control unit (CU) – It controls and coordinates flow of data between different parts of the computer. b. Arithmetic and logic unit (ALU) – It performs Arithmetic and Logical operations of the computer. c.Memory unit (MU) – It is the ability of the computer to store information for future use. (1/2 mark each)	2
	24.	**Interactive mode:**In Interactive mode, the instructions are given in front of command prompt >>>, and the output gets displayed just below the command. Further, the commands entered by the user, is not saved in the form of a program. It is convenient for beginners to test small pieces of code. Prompt of Python (>>>) tells the user that it's ready for user instructions. **Script mode:**In Script mode, Python instructions are stored in a file with .py extension and are executed together as a unit. Script mode is used for coding more than few lines.	2

		The saved instructions are known as Python script or Python program. (1 mark each)	
	25.	Explain any two AI Domains. i)Data science: is the study of data. It is related to data systems and processes in which the system collects numerous data maintains data sets and extracts information out of them. ii)CV, is a domain of AI that depicts the capability of a machine to gather, analyse visual information and afterwards predict some decisions about it. In computer vision, Input to machines can be photographs, videos and pictures from thermal or infrared sensors, indicators and different sources. iii)Natural Language Processing is a branch of artificial intelligence that deals with the interaction between computers and humans using the natural language. Natural language refers to language that is spoken and written by people and natural language processing (NLP) attempts to extract information from the spoken and written word using algorithms. (Any two domain explanation – 1 mark each)	2
	26.	Problem scoping, Data acquisition , Data Exploration , Modelling, Evaluation (1 mark) **Problem Scoping** — Understanding the problem **Data Acquisition** — Collecting accurate and reliable data **Data Exploration** — Arranging the data uniformly **Modelling** — Creating Models from the data **Evaluation** — Evaluating the project Explanation of any two – 1 mark	2
	27.	/ - divides left operand with right operand Eg print(5/2) # output 2.5 // - integer division (floor division)- gives only the integer quotient. Eg print(5//2) # output 2 (1/2 mark explanation , ½ mark example)	2
	28.	Python has six comparison operators: • less than (<) • less than or equal to (<=) • greater than (>) • greater than or equal to (>=) • equal to (==) • not equal to (!=). (1/4 mark each).	2

		• Value returned by Comparison operator - boolean value, either True or False .((1/2 mark).	
	29.	49 1 (1 mark each)	2
	30.	**1.Who -** "Who" part helps us in comprehending and categorizing who all are affected directly and indirectly with the problem and who are called the stakeholders. **2. What -** "What" part helps us in understanding and identifying the nature of the problem. **3. Where -** "Where" does the problem arises, situation and the location. **4. Why -** "Why" is the given problem worth solving. (1 mark each)	4

	31.	If – elif statement is used to check multiple conditions.
		
		Python evaluates each condition in turn and executes the statements corresponding to the first **if** that is true. If none of the expressions are true, then the statement in else clause is executed.
		
		Example:
		`If (percentage >90):`
		`  Print("Outstanding")`
		`elif (percentage >80):`
		`  print ("Excellent")`
		`elif (percentage >70):`
		`  print ("VeryGood")`
		`elif (percentage >60):`
		`  print ("Good")`
		`elif (percentage >33):`
		`  print ("Pass")`
		`else`
		`  print("Fail")`
		
		(explanation – 2 marks, example – 2 marks)
			4

	32.	(input or assign u,t,a any 3 values)
		
		u=int(input("Enter initial velocity")) # u=3
		t= int(input("Enter time")) # t=2
		a=int(input("Enter acceleration")) #a=10
		S=u*t+1*a*t*t/2
		print("Distance=",S)
		(input or assign u,t,a - 1 mark
		Calculation – 2 marks, printing output - 1 mark)
			4

SET	B

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CLASS:IX Max.Marks: 50

MARKING SCHEME			
SET	QN.NO	VALUE POINTS	MARKS SPLIT UP
		Section A - objective questions	
	1.	Opportunity	1
	2.	d) self confidence	1
	3.	b) projector	1
	4.	Peripherals	1
	5.	Sophia	1
	6.	Computer Vision (CV)	1
	7.	availability of information	1
	8.	>>> , .py (1/2 mark each)	1
	9.	NLP	1
	10.	c) Who, What, Where and Why	1
	11.	trained with required information	1
	12.	Data Acquisition	1
	13.	d) Diction	1
	14.	List	1

	15.	Complex	1
	16.	Keyword	1
	17.	b) Problem Statement Template	1
	18.	c) Dictionary	1
	19.	d) variable	1
	20.	String	1
		Section B - Subjective questions	
	21.	Central processing unit processes input to produce output based on the instructions given by the user. It is considered as the brain of the computer.(1/2 mark) The CPU is further divided into three parts: b. Control unit (CU) – It controls and coordinates flow of data between different parts of the computer. b. Arithmetic and logic unit (ALU) – It performs Arithmetic and Logical operations of the computer. c.Memory unit (MU) – It is the ability of the computer to store information for future use. (1/2 mark each)	2
	22.	• Develop good habits • Overcome bad habits • Motivate to achieve goals in life • Helps to overcome difficult situations (1/2 mark each point)	2
	23.	a) Self Reinforcement -Self-reinforcement is a process by which individuals control their behavior by rewarding themselves when a certain level of performance has been reached. (1 mark) b) Personality management involves general cleanliness, appropriate clothing, grooming, adequate verbal and non-verbal communication that creates a good and favorable impression. (1 mark)	2
	24.	• Identifier name is an arbitrarily long sequence of letters and digits, unlimited in length. • Upper and lower case letters are different as Python is case sensitive. • It cannot contain any special character except for underscore(_). • The digits 0 through 9 can be part of the identifier except for the first character. • The first character must be a letter, or the underscore(_) that counts as a letter. • **(Any 4 – ½ mark each)**	2

	25.	Explain any two AI Domains. i)Data science: is the study of data. It is related to data systems and processes in which the system collects numerous data maintains data sets and extracts information out of them. ii)CV, is a domain of AI that depicts the capability of a machine to gather, analyse visual information and afterwards predict some decisions about it. In computer vision, Input to machines can be photographs, videos and pictures from thermal or infrared sensors, indicators and different sources. iii)Natural Language Processing is a branch of artificial intelligence that deals with the interaction between computers and humans using the natural language. Natural language refers to language that is spoken and written by people and natural language processing (NLP) attempts to extract information from the spoken and written word using algorithms. (Any two domain explanation – 1 mark each)	2
	26.	**Problem Scoping** — Understanding the problem **Data Acquisition** — Collecting accurate and reliable data **Data Exploration** — Arranging the data uniformly **Modelling** — Creating Models from the data **Evaluation** — Evaluating the project Explanation of any four – **½ mark each**	2
	27.	* - multiplies left operand with right operand Eg print(5*2) # output 10 **- exponent operator -gives exponential power value. Eg print(5**2) # output 25 (1/2 mark explanation , ½ mark example)	2
	28.	Python has six comparison operators: • less than (<) • less than or equal to (<=) • greater than (>) • greater than or equal to (>=) • equal to (==) • not equal to (!=). (1/4 mark each). Value returned by Comparison operator - boolean value, either True or False .((1/2 mark).	2
	29.	2 3 (1 mark each)	2
	30.	**1.Who -** "Who" part helps us in comprehending and categorizing who all are affected directly and indirectly with the problem and who are called the stakeholders. **2. What -** "What" part helps us in understanding and identifying the nature	4

		of the problem. **3. Where -** "Where" does the problem arises, situation and the location. **4. Why -** "Why" is the given problem worth solving. (1 mark each)	

	31.	#input or assign u,t,a any 3 values
		u=int(input("Enter initial velocity")) # u=3
		t= int(input("Enter time")) # t=2
		a=int(input("Enter acceleration")) #a=10
		S=u*t+1*a*t*t/2
		print("Distance=",S)
		(input or assign u,t,a - 1 mark
		Calculation – 2 marks, printing output - 1 mark)
			4

	32.	If – elif statement is used to check multiple conditions.
		
		Python evaluates each condition in turn and executes the statements corresponding to the first **if** that is true. If none of the expressions are true, then the statement in else clause is executed.
		
		Example:
		`If (percentage >90):`
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		`  print ("Pass")`
		`else`
		`  print("Fail")`
		
		(explanation – 2 marks, example – 2 marks)
			4

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MARKING SCHEME			
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		Section A - objective questions	
	1.	Time Management	1
	2.	Threats	1
	3.	Peripherals	1
	4.	c) Web camera	1
	5.	trained with required information	1
	6.	Data Science	1
	7.	Sophia	1
	8.	Computer Vision (CV)	1
	9.	>>> , .py (1/2 mark each)	1
	10.	c) Problem Scoping	1
	11.	Data Acquisition	1
	12.	b) Problem Statement Template	1
	13.	a) Who, What, Where and Why	1
	14.	c) Dictionary	1

	15.	a) float	1
	16.	%	1
	17.	Complex	1
	18.	String	1
	19.	d) variable	1
	20.	List	1
		Section B - Subjective questions	
	21.	• Develop good habits • Overcome bad habits • Motivate to achieve goals in life • Helps to overcome difficult situations (1/2 mark each point)	2
	22.	a) Self confidence : It is the trust in one's own ability and strengths. Techniques to build self-confidence and sustain it in the long run. * SWOT analysis helps to understand one's own strength, weakness, opportunity and threat. * Stay positive (1 mark) b) Self Reinforcement -Self-reinforcement is a process by which individuals control their behavior by rewarding themselves when a certain level of performance has been reached. (1 mark)	2
	23.	Central processing unit processes input to produce output based on the instructions given by the user. It is considered as the brain of the computer.(1/2 mark) The CPU is further divided into three parts: c. Control unit (CU) – It controls and coordinates flow of data between different parts of the computer. b. Arithmetic and logic unit (ALU) – It performs Arithmetic and Logical operations of the computer. c.Memory unit (MU) – It is the ability of the computer to store information for future use. (1/2 mark each)	2
	24.	**Interactive mode:**In Interactive mode, the instructions are given in front of command prompt >>>, and the output gets displayed just below the command. Further, the commands entered by the user, is not saved in the form of a program. It is convenient for beginners to test small pieces of code. Prompt of Python (>>>) tells the user that it's ready for user instructions **Script mode:**In Script mode, Python instructions are stored in a file with .py extension and are executed together as a unit. Script mode is used for coding more than few lines. The saved instructions are known as Python script or Python program. (1 mark each)	2

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	27.	// - floor division (integer quotient) Eg print(5//2) # output 10 **- exponent operator -gives exponential power value. Eg print(5**2) # output 25 (1/2 mark explanation , ½ mark example)	2
	28.	2 2.4 (1 mark each)	2
	29.	Python has six comparison operators: • less than (<) • less than or equal to (<=) • greater than (>) • greater than or equal to (>=) • equal to (==) • not equal to (!=). (1/4 mark each). Value returned by Comparison operator - boolean value, either True or False .((1/2 mark).	2

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