Atomic Energy Central School, Kaiga

Annual Examination - 2021-22

Class: 9th Max Marks: 25

Sub: Artificial Intelligence Date: 16.3.2022

1. **State True or False** **1x3=3**
   a) AI biases are as good as human biases in complicated algorithms
   b) Data scientist help to fetch information mostly from huge volume of data
   c) AI is exactly same as Human Intelligence.
2. **Expand the following.** **1x4=4**
   i) ML
   ii) DL
   iii) NLP
   iv) CV

3. **Answer the following questions (Any SIX)** **3x6=18**
   a. What basic changes expected in the world due to the invent of AI ?
   b. Write three applications of artificial intelligence.
   c. What are the three main core areas of AI and explain.
   d. Define flowchart in programming language.
   e. List any three social networking applications.
   f. Write algorithms to add Two numbers.
   g. What is musical intelligence in human beings?
   h. How computing system evolved over the years compare their characteristics.
   i. List any 4 Types of human intelligence and explain.
   j. Write a note on three types of Data used in AI.

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Atomic Energy Education Society

Annual Examination-2021-22

Class: IX **Time: 2 Hrs.**

Subject: ENGLISH **Marks: 40**

General Instructions:

1. The Question Paper contains **THREE** sections – **READING**, **WRITING** & **GRAMMAR** and **LITERATURE.**
2. **READING** – 10 MARKS, **WRITING & GRAMMAR** – 10 MARKS, **LITERATURE** – 20 MARKS.
3. Attempt questions based on **specific instructions** for each part.

SECTION – A READING (10 MARKS)

1. <u>Read the passage given below</u>.

- Floods are not new to India and this sub-continent, but in recent years the problem has received much greater attention perhaps largely because it has led to much greater damage than in the past. Even though information on the impending occurrence of floods is now more accurate and certainly much timely, often there is very little time or support infrastructure in place by which damage can be minimized. This is particularly true in the case of flash floods resulting from sudden and excessively heavy rain. In the case of India, flooding is very much a function of the seasonal nature of our rainfall. The monsoons are spread over a short period during the year and often bring a concentrated volume of rain, which cannot be absorbed by the earth and finds outlet only in the form of streams that join up with our major river systems. Once these streams spill over their banks they could cause excessive harm, mainly because those living near the banks of these streams particularly in mountain areas do not have easy recourse to moving away quickly.
- One major factor that could lead to a higher severity of flooding in the future is the danger of climate change. While the evidence of the nature of impacts resulting from climate change on precipitation and flooding at the regional level is not entirely clear,

it could happen that the Indian subcontinent witnesses and suffers the effects of a significantly changed pattern of monsoons. One set of scientists has estimated that the monsoons could be shorter in duration, but far more intensive. Climate change is the result of human actions through the increased concentration of greenhouse gases in the atmosphere, of which carbon dioxide is the most prominent.

- At the local level also, human actions have heightened the danger of flood through the cutting of trees in the mountains as well as in the plains. In the case of India, the ecological damage through deforestation of the Himalayas has led to large-scale erosion of the mountain slopes and high levels of siltation. This leads to deposition of silt on the riverbeds in the plains and hence spill over of water whenever the volume in the river reaches a certain level. With siltation on the river beds, flooding occurs even at very shallow water levels. The vulnerability of the population has increased substantially because of population pressures, symbolized, for instance, by the stubborn and perhaps helpless settling of slum dwellers on the banks of the river Yamuna in Delhi, which is merely a trickle most of the year, but bursting its banks during the monsoons as has been the case this year.
- Flood forecasting is critical to minimizing the damage from floods. It is for this reason that the Central Water Commission has set up a network of forecasting stations, which cover the most important flood prone inter - state rivers in the country. These stations produce forecasts that are used to alert the public and to mobilize various official agencies so that they take both preventive as well as relief measures whenever required. However, in the case of flash floods, forecasts are difficult to make, and often the time available for relief is very short.

Based on your understanding of the passage, answer***ANY FIVE***questions from the six given below. **(1 x 5 = 5)**

i) Why does India suffer from floods during monsoons? **(1)**

ii) What is the result of greenhouse gases? **(1)**

iii) Why has the problem of flash floods been considered important recently? **(1)**

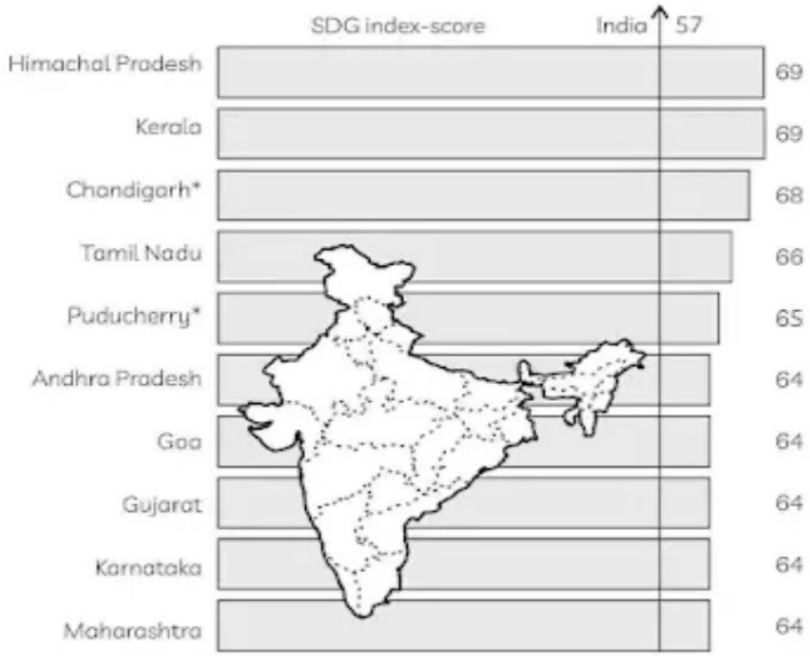
iv) Who are the worst hit people during floods? Why? **(1)**

v) What has heightened the danger of flood? **(1)**

vi) Find the word from the above passage that means "susceptibility or exposure to attack or harm". (paragraph 3) **(1)**

2. <u>Read the passage given below</u>.

- Himachal Pradesh, Kerala and Tamil Nadu have emceed as the front runners in the race to achieve key Sustainable Development Goals (SDG) like removal of poverty, inequality while Assam, Bihar and Uttar Pradesh are the laggards in ranking of states. According to the SDG India index, the nation as a whole has a score of 57, showing the country has reached a little beyond the halfway mark in meeting the sustainable development goals adopted by India and 192 other nations in 2015. The index covers 13 of the 17 sustainable development goals, including healthcare, gender equality, clean energy, infrastructure, education, peace and building strong, accountable institution.
- Some goals, including climate action and sustainable use of marine resources, were left out because of lack of data at the state level. Kerala's overall top rank (69) is attributed to its strong performance in providing good health, reducing hunger, achieving gender equality and providing quality education. The rank shows the distance each state has to cover to reach 100 - the point at which it fully meets the sustainable development goal.



- Himachal Pradesh ranks high with a similar overall score in providing clean water and sanitation, reducing inequalities and preserving the mountain ecosystem. Tamil Nadu has a score of 66. Among Union territories, Chandigarh takes the lead with a score of 68 on account of its track record in providing clean water and sanitation. Performance in providing quality education has also helped Chandigarh achieve high score.
- Tamil Nadu topped the states in poverty reduction, while Kerala topped in providing quality education, closely followed by Chandigarh and Himachal Pradesh. Kerala and Tamil Nadu also topped in facilitating good health and well-being. Gender equality, however, is an area all states and the nation as a whole need to improve upon. The toppers in gender equality – Sikkim, Union Territories, Andaman and Nicobar Islands and Chandigarh have crossed the hallway mark in reaching the goals. The scores represent the current status of achievement in meeting the goals.

Based on your understanding of the passage, answer ***ANY FIVE***questions from the six given below. **(1 x 5 = 5)**

i) Why does Chandigarh take the lead among Union Territories? **(1)**

ii) Which are the goals not counted under SDG India Index? Why is it so? **(1)**

iii) Which state topped in providing quality education? **(1)**

iv)Which states are considered "laggards" in the ranking of states? **(1)**

v) What do 100 points mean as per SDG Index? **(1)**

vi)Why are Himachal Pradesh, Chandigarh and Tamil Nadu called the front runners in the race to achieve sustainable development goal? Suggest a suitable title for the passage. **(1)**

SECTION – B WRITING& GRAMMAR(10 MARKS)

3. Attempt*ANY ONE*from I and II.

I. You are Ankit / Neha of the city of Lucknow. You saw deforestation taking place on the outskirts of your city. Using the following cues, make a diary entry expressing your sorrow over the issue. ***(100 – 120 Words)*** **(5)**

- Destructive sight
- Killing trees for selfish needs
- Fearless and heartless behaviour
- Agitated and disheartened by such acts

OR

II.<u>Using the clues given below, develop a readable story in about *100 – 120 Words*</u>. (5)

"There was a storm brewing outside and my brother and I were all alone at home. Suddenly the lights went out ……."

4. <u>Read the dialogue given below and fill in the blanks appropriately</u>. (1 x 3 = 3)

Nicholas: Bobby won't enjoy himself much, and he won't race much either. His boots are hurting him. They are too tight.

Aunt: Why didn't he tell me they were hurting?

Nicholas: He told you twice, but you weren't listening. You often don't listen when we tell you important things.

Nicholas said that Bobby _____(a)_____and that he wouldn't race much either because his boots were hurting him and they were too tight. His aunt asked _____(b)_____ . Nicholas replied that he had told her twice but she had not been listening.He added that _____(c)_____ .

5. <u>Fill in the blanks with appropriate forms of the verbs given in brackets</u>.(1/2 x 4 = 2)

I _____(a)_____ (run) for a bus when I _____(b)_____ (hit) my foot on something on the pavement and _____(c)_____ (fall) over. I tried to get up but could not ___(d)_____ . (move)

SECTION – C LITERATURE(20 MARKS)

6. Answer*ANY SIX*questions in *30-40 words each*. (2 x 6 = 12)

i.) How did the author capture Bruno after his mother had been shot dead? **(2)**

ii.) How do we defile and outrage the human earth that is ours? **(2)**

iii.) What was Jerome's intention behind his offer of packing? How was Jerome caught into his own words in 'Packing'? **(2)**

iv.) How can the tree get back to its former size? **(2)**

v.) SantoshYadav got into the record books both times she scaled Mount Everest? What were the reasons for this? **(2)**

vi.) Behrman has a dream. What is it? Does it come true? **(2)**

vii.) Why did Prashant go to the Red Cross Shelter? Who was the first to meet Prashant there? **(2)**

7. Answer*ANY TWO*questions in about*120 words each*. (4 x 2 = 8)

i. Presence of mind and patience are the two values that help a person at the time of adversity and danger. How did these two attributes of Gerrard help him to get rid of the intruder? **(4)**

ii. The poem "The Snake Trying" by W.W.E. Ross presents two divergent attitudes towards the snake. Discuss both attitudes. **(4)**

iii. Is the title of the story 'A House is Not a Home' appropriate? Justify your answer with reference to the story 'A House is Not a Home' by ZanGaudioso. **(4)**

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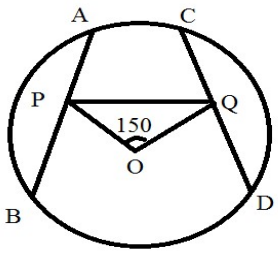
Annual Examination- 2021-22

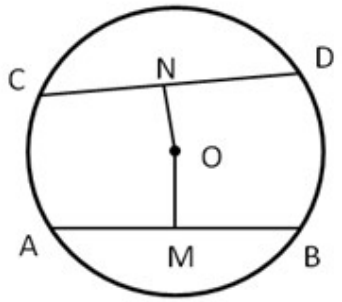
Class: IX **Time: 2 hours**

Subject: Mathematics **Marks: 40M**

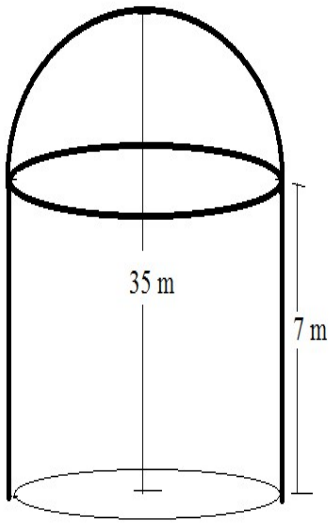
General Instructions:

1. The question paper consists of 14 questions divided into 3 sections A, B, C.
2. All questions are compulsory.
3. Section A comprises of 6 questions of 2 marks each. Internal choice has been provided in two questions.
4. Section B comprises of 4 questions of 3 marks each. Internal choice has been provided in one question.
5. Section C comprises of 4 questions of 4 marks each. An internal choice has been provided in one question. It contains two case study based questions.

Section- A		
Q.No		Marks
1.	Find the remainder when the polynomial $x^3 - 2x^2 + x + 1$ is divided by $x - 2$?	2M
2.	If $a + b + c = 9$ and $ab + bc + ca = 26$, then find $a^2+b^2+c^2$.	2M
3	Evaluate : $(102)^3$	2M
4	Without actually calculating the cube, find the value of $\mathbf{(28)^3 - (15)^3 - (13)^3}$	2M
5	AB and CD are two equal chords of a circle with centre O. OP and OQ are perpendiculars on chords AB and CD, respectively. If $\angle POQ = 150^o$, then $\angle APQ$ is ? 	2M

	OR In the given figure, O is the centre of the circle. AB and CD are two chords of the circle. OM is perpendicular to AB and ON is perpendicular to CD. AB = 24 cm, OM = 5 cm, ON = 12 cm, Find the length of chord CD.  	
6	How much ice-cream can be put into a cone with base radius 3.5 cm and height 12 cm? **OR** The radii of two cylinders are in the ratio of 2:3 and their heights are in the ratio of 5:3. What is the ratio of their volumes?	2M
	Section B	
7	Show that the Quadrilateral formed by joining the mid points of adjacent sides of any quadrilateral is a parallelogram. **OR** Show that if the diagonals of a quadrilateral bisect each other at right angles, then it is a rhombus.	3M
8	Construct a ΔABC with base BC =5.6cm, $\angle B = 45^0$ and AC – AB= 3.5cm.	3M
9	Prove that "Two equal chords of a circle subtend equal angles at the centre of the circle".	3M
10	A wall of length 10 m is to be built across an open ground. The height of the wall is 6 m and thickness of the wall is 42 cm. If this wall is to be built with brick of dimensions 42 cm × 12 cm × 10 cm, then how many bricks would be required?	3M
	Section C	
11	Construct a triangle ABC in which BC = 7cm, ∠B = 75° and AB+AC = 13 cm.	4M
12	Nine cards (identical in all respects) are numbered 2 to 10. A card is selected from them at random. Find the probability that the card selected will be:	4M

<table>
<tr><td></td><td>(i) an even number
(ii) a multiple of 3
(iii) an even number and a multiple of 3
(iv) an even number or a multiple of 3
OR
Three coins are tossed simultaneously 200 times with the following frequencies of different outcomes :
<table><tr><td>Outcome</td><td>3 tails</td><td>2 tails</td><td>1 tail</td><td>no tail</td></tr><tr><td>Frequency</td><td>20</td><td>68</td><td>82</td><td>30</td></tr></table>If the three coins are simultaneously tossed again, compute the probability of getting(a) less than 3 tails (b) no tail (c) more than one tail.</td><td></td></tr>
<tr><td>13</td><td>3 friends A, B and C of locality decided to start a business with a capital represented by a polynomial $x^3 - kx^2-x+5$, which is the product of their shares, such that shares of A, B and C are in decreasing order.</td><td></td></tr>
<tr><td>(i)</td><td>If share of A in the capital polynomial is x+1, then find k.</td><td>2M</td></tr>
<tr><td>(ii)</td><td>If x =20, then what is total capital ?</td><td>2M</td></tr>
<tr><td>14</td><td>The Taj Mahal was designated as a UNESCO World Heritage Site in 1983 for being "the jewel of Muslim art in India and one of the universally admired masterpieces of the world's heritage". It is regarded by many as the best example of Mughal architecture and a symbol of India's rich history. The Taj Mahal attracts more than 6 million visitors a year. The most spectacular feature is the marble dome that surmounts the tomb.</td><td></td></tr>
</table>

(i)	The dome is nearly 35m high which is close in measurement to the length of the base, and accentuated by the cylindrical "drum" it sits on, which is approximately 7m high.  Find the Curved surface area of the dome?	2M
(ii)	What is the volume of air occupied in the cylindrical drum?	2M

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Atomic Energy Education Society

Annual Examination 2021-22

Class: IX **Time: 2 hours**

Subject: Science **Marks: 40**

General Instructions:

i) All questions are compulsory.

ii) The question paper has **three sections** and **15 questions**. All questions are compulsory.

iii) Section–A has 7 questions of 2 marks each; Section–B has 6 questions of 3 marks each; and Section–C has 2 case-based questions of 4 marks each.

iv) Internal choices have been provided in some questions. A student has to attempt only one of the alternatives in such questions.

	SECTION - A	
1	What do you understand by variable valency ? Give two examples of metal atoms which show variable valency ?	2
2	A man of mass 60 kg climbs a height of 10m in 5 seconds. Calculate the power of the man. ($g = 9.8\ m/s^2$) OR Define law of conservation of energy. Give one suitable example.	2
3	Write the electronic configuration and valency of i) Sodium ii) Oxygen	2
4	a) Name two diseases caused by protozoans. b)Name the target organs of the following diseases. 1) Pneumonia:_____ 2) Hepatitis: _____	1 1

5	State the postulate of Dalton's atomic theory which a) is the result of the law of conservation of mass. b) can explain the law of definite proportion OR a) State the law of conservation of mass. b) Differentiate between an anion and a cation.	2
6	Distinguish between 'healthy' and 'disease-free'. OR Why are antibiotics not effective for viral diseases?	2
7	Calculate the average atomic mass of element X if the percentage abundance of the isotope $^{20}_{10}X$ is 90% and that of isotope $^{22}_{10}X$ is 10%. Calculate the average atomic mass of element X.	2
	SECTION – B	
8	Deduce the formula for the Kinetic energy of an object. OR What must be the velocity of a moving body of mass 16 kg so that its Kinetic Energy is 800J?	3
9	a) Define the term molecular mass. b) Calculate the number of moles in 12 g of O_2 gas. (Atomic mass of Oxygen = 16g)	3
10	Define work done. Is the work done a scalar or a vector quantity? A force of 12 N acts on an object. Find the displacement if work done is 84 J.	3
11	a) Write the chemical formulae of the given compound using criss cross method. i) Aluminium chloride ii) Calcium hydroxide b) Identify the cation and anion present in Sodium sulphate. OR a) What is meant by atomicity? b) Calculate the atomicity of i) $CaCO_3$ ii) NaOH c) Name the compounds. i) CCl_4ii) H_2S	3

12	Give three differences between gravitational acceleration (g) and gravitational constant (G).	3
13	A man weighs 600 N on the earth. What is his mass? (Take g = 10 m/s^2) If he were taken to the moon, his weight would be 100 N. What is his mass on the moon? What is the acceleration due to gravity of the moon? OR An object is thrown vertically upwards and reaches a height of 45 m. Find the velocity at which the object was thrown. How much time does it take to reach the height of 45 m? (Take g = 10 m/s^2)	3
	SECTION – C This section has 02 case-based questions (14 and 15). Each case is followed by 03 sub-questions (a, b and c).	
14	Read the following and answer the questions given below. Many scientists contributed in revealing the presence of charged particles in an atom. It was known by 1900 that the atom was an indivisible particle but contained at least one subatomic particle identified by J.J. Thomson. E. Goldstein in 1886 discovered the presence of new radiations in a gas discharge and called them canal rays. a) Name the three subatomic particles in an atom. (1 Mark) b) Write the number of subatomic particles in an atom of element with atomic number 18 and mass number 40. (1 Mark) c) What are canal rays? State the nature of the constituents of canal rays. (2 Marks)	4
15	Read the following and answer the questions given below. Infectious diseases are also called communicable diseases because they can spread from an infected person to a healthy person. These diseases are caused by various pathogenic microorganisms. The means of spread of these diseases are different for different pathogens. The disease transmission can be direct or indirect .These diseases spread from infected person to a healthy person through air, water, food, vectors, physical contact and sexual contact a) Name two diseases which spread through vectors. (1 Mark) b) List any two symptoms of tuberculosis. (1 Mark) c) What are the two principles of treatment of infectious diseases? (2 Marks)	4

Total No. of printed pages - 05

Atomic Energy Education Society

Annual Examination- 2021-22

Class: IX **Time: 2 hours**

Subject: Social Science **Marks: 40**

General Instructions:

i. This Question paper is divided into five sections-Section A, B, C, D and E.

ii. All questions are compulsory.

iii. Section-A: Question no. 1 to 5 are very short answer type questions of 2 marks each. Answer to each question should not exceed 40 words.
iv. Section-B: Question no. 6 to 8 are short answer type questions, carrying 3 marks each. Answer to each question should not exceed 80 words.
v. Section-C: Question no. 9 and 10 are long answer type questions, carrying 5 marks each. Answer to each question should not exceed 120 words.
vi. Section-D: Question no. 11 and 12 are Case Based questions.
vii. Section-E: Question no. 13 is map based, carrying 3 marks with two parts, 13.1 from History (1 mark) and 13.2 from Geography (2 marks).
viii. There is no overall choice in the question paper. However, an internal choice has been provided in a few questions. Only one of the choices in such questions have to be attempted.

ix. In addition to this, separate instructions are given with each section and question, wherever necessary

SECTION A **2 x 5=10**

(Very short Answer Type Questions)

1. Describe the main event that led to the 1905 Revolution in Russia. (2)
2. Define monsoons. What do you understand by "breaks" in monsoon? (2)
3. What are the reserved constituencies? (2)
4. "The Constitution of India has made necessary provisions for ensuring independence of judiciary." Justify your answer by giving two reasons. (2)
5. Identify the social and economic groups which are most vulnerable to poverty in India. (2)

SECTION B **3 x 3 =9**

(Short Answer Type Questions)

6. The Peace Treaty at Versailles with the Allies was a harsh and humiliating peace. Explain the statement with any three examples. (3)

OR

What do you know about 'Nazi schooling'? (3)

7. Give an account of weather conditions and characteristics of the cold season in India? (3)
8. Why is there a need for political institutions? (3)

SECTION C **5 x 2 = 10**

(Long Answer Type Question)

9. Name different types of Vegetation found in India and describe the vegetation of high altitudes. (5)

OR

Which factors are responsible for the distribution of plants and animals in India? (5)

10. Describe the major reasons for poverty in India. (5)

OR

Name any four poverty alleviation programs of Indian Government.
Describe anyone. (5)

SECTION D **4 x 2 = 8**

(Case Based Questions)

11. Read the given text and answer the following questions:

The year 1904 was a particularly bad one for Russian workers. Prices of essential goods rose so quickly that real wages declined by 20 percent. The membership of workers' associations rose dramatically. When four members of the assembly of Russian workers, which had been formed in 1904, were dismissed at the Putilov Iron Works, there was a call for industrial action. Over the next few days over 110,000 workers in St Petersburg went on strike,demanding a reduction in the working day to 8 hours, an increase in wages and improvement in working conditions.

11.1 What do you mean by 'real wages? (1)

11.2 Mention any one of the demands of the revolutionaries? (1)

11.3 What was the 'Bloody Sunday'? (2)

12. Read the given text and answer the following questions:

While determining the poverty line in India, a minimum level of food requirement, clothing, foot wear, fuel and light, educational and medical requirement etc. are determined for subsistence. These physical quantities are multiplied by their prices in rupees. The present formula for food requirement while estimating the poverty line is based on the desired calorie requirement. Food items, such as cereals, pulses, vegetables, milk, oil, sugar etc., together provide these needed calories. The calorie needs vary depending on age, gender and the type of work that a person does.

12.1 What is the accepted average calorie requirement in India, in rural and urban areas? (1)

12.2 Why is the average calorie requirement in rural areas more than urban areas? (1)

12.3 What is NSSO? (2)

SECTION E **1x3=3**

(Map Skill Based Questions)

13. 1. On the outline map of world locate and label any ONE-member nation of the Allied Powers of First World War. (1)

13.2 On the outline map of India locate the following:

a. Wular Lake **OR** Chilika Lake (1)

b. Kaziranga National Park (1)


N
INDIA
BLANK MAP
Arabian Sea
Bay of Bengal
International Boundary
INDIAN OCEAN
Map not to Scale
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