YOUR NAME (FIRST, ... LAST)	YOUR ID INFORMATION

YOUR TOTAL MARKS	TOTAL FULL MARKS
	100.00

THIS IS AN EXAMPLE OF PERSONALIZED TESTS.

If needed, please use the following constants.

Constant	Symbol	Value
Acceleration due to earth's gravity	g	9.80 m/s^2
Avogadro's number	N_A	6.0221367×10^{23} mol^{-1}
Boltzmann's constant	k	1.380658×10^{-23} J/K
Coulomb's constant	k	8.99×10^{9} N·m^2/C^2
Electron charge magnitiude	e	$1.60217733 \times 10^{-19}$ C
Permeability of free space	μ_0	$1.25663706 \times 10^{-6}$ T·m/A
Permittivity of free space	ϵ_0	$8.854187817 \times 10^{-12}$ C^2/(N·m^2)
Pi	π	3.14159265
Planck's constant	h	$6.6260755 \times 10^{-34}$ J·s
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg
Mass of neutron	m_n	$1.6749286 \times 10^{-27}$ kg
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Speed of light in vacuum	c	299792458. m/s
Universal gravitational constant	G	6.67259×10^{-11} N·m^2/kg^2
Universal gas constant	R	8.314510 J/(mol·K)

Please be advised that in this paper there are questions from 26.1 through 26.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

YOUR MARKS	Full Marks
	62.50

QUESTION 26.1

Please answer ONLY 5 of the following 6 questions (Questions 26.1.1 through 26.1.6).

Here are still some constants for use in the following questions:

Constant	Symbol	Value
Boltzmann's constant	k	1.381×10^{-23} J/K
Avogadro's number	N_A	6.022×10^{23} mol^{-1}
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg

Your marks	Full marks
	12.50

Question 26.1.1

See the following picture.
Which one of the following is missing in it?

Your choice

A. An air-boat
B. Lawn
C. A table
D. A truck
E. An airplane

F. Not any of aboves.

Your marks	Full marks
	12.50

Question 26.1.2

In a hotel, the possiblity of non-smoking customer is $a = 0.270$, and the possiblity of equal or above 30 years old customer is $b = 0.5200$. Please calculate the possiblity of smoking and under 30 years old customer.

Your marks	Full marks
	12.50

Question 26.1.3

What is the operation between $a = 3$ and $b = 2$: $a + b =$? Please also calculate it.

Your marks	Full marks
	12.50

Question 26.1.4

Let us use Newton's Law of Universal Gravitation to calculate the force of the Sun acting on the eight planets. Let us suppose the mass of the Sun is $7.00 \times 10^{24} kg$. With the mass and the distance to the Sun of each planet in the following table, please fill the blanks for the forces.

The Planet	Mass (kg)	Distanace from Sun (m)	The Force (N)
Mercury	$2.00000000 \times 10^{24}$	$5.000000000 \times 10^{24}$	
Venus	8.00×10^{24}	6.00×10^{24}	
Earth	9.00×10^{24}	3.00×10^{24}	
Mars	9.00×10^{24}	4.00×10^{24}	
Jupiter	2.00×10^{24}	3.00×10^{24}	
Saturn	9.00×10^{24}	6.00×10^{24}	
Uranus	8.00×10^{24}	7.00×10^{24}	
Neptune	5.00×10^{24}	4.00×10^{24}	

Your marks	Full marks
	12.50

Question 26.1.5

An object is subjected to an external net force $\mathbf{f} = (80.0, 3.0, -3000.0)N$. Its mass is known as $m = 52.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(6.6592ms^{-2}, 5.7692\times10^{-2}ms^{-2}, -2.5735\times10^{6}km/h^{2})$.
B. The accelaration is $(6.6592ms^{-2}, -0.12162ms^{-2}, -2.5735 \times 10^{6}km/h^{2})$.
C. The accelaration is $(6.6592ms^{-2}, 5.7692 \times 10^{-2}ms^{-2}, -747692.km/h^{2})$.
D. The accelaration is $(1.5385ms^{-2}, 5.7692 \times 10^{-2}ms^{-2}, -747692.km/h^{2})$.
E. none of these.

Your marks	Full marks
	12.50

Question 26.1.6

An object is subjected to an external net force $\mathbf{f} = (90.0, 2.0, -7000.0)N$. Its mass is known as $m = 56.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration (vector) is $(-103670., 462.86, 4.9517 \times 10^{6})km/h^{2}$.
B. The accelaration (vector) is $(55447., 462.86, 6.8897 \times 10^{6})km/h^{2}$.
C. The accelaration (vector) is $(55447., 462.86, -1.6200 \times 10^{6})km/h^{2}$.
D. The accelaration (vector) is $(20829., 462.86, -1.6200 \times 10^{6})km/h^{2}$.
E. The accelaration (vector) is $(20829., 462.86, 6.8897 \times 10^{6})km/h^{2}$.
F. The accelaration (vector) is $(-103670., 462.86, 6.8897 \times 10^{6})km/h^{2}$.
G. The accelaration (vector) is $(20829., 462.86, 4.1819 \times 10^{6})km/h^{2}$.
H. The accelaration (vector) is $(71153., 462.86, 4.1819 \times 10^{6})km/h^{2}$.
I. The accelaration (vector) is $(55447., 462.86, 4.9517 \times 10^{6})km/h^{2}$.
J. The accelaration (vector) is $(-103670., 462.86, 4.1819 \times 10^{6})km/h^{2}$.
K. The accelaration (vector) is $(71153., 462.86, 4.9517 \times 10^{6})km/h^{2}$.
L. The accelaration (vector) is $(-103670., 462.86, -1.6200 \times 10^{6})km/h^{2}$.

You have done all the above? A very good beginning, please go ahead. More constants the Mass of electron m_e= 9.109390×10^{-31} kg , Universal gas constant R= 8.315 J/(mol·K) , e= $1.60217733 \times 10^{-19}$ C , and m_p= $1.6726231 \times 10^{-27}$ kg may be very helpful.

YOUR MARKS	Full Marks
	1.56

QUESTION 26.2

If any one of the following statements is correct, please fill the box ahead of it with T . If wrong, fill with F.

Your answer		1. 96 is an even number.
Your answer		2. Toronto is in Ontario province.
Your answer		3. $\|\mathbf{F}\| = Gm_1m_2r^{-2}$ is a mathmatical form of the Newton's Second Law.

YOUR MARKS	Full Marks
	1.56

QUESTION 26.3

Please choose the correct one from the following statements:

Your choice

A. Canada has 34 provinces and 39 territories.
B. Canada has 37 provinces and 37 territories.
C. Canada has 36 provinces and 35 territories.
D. Canada has 33 provinces and 38 territories.
E. Canada has 35 provinces and 34 territories.
F. None of above.

YOUR MARKS	Full Marks
	1.56

QUESTION 26.4

An object is subjected to an external net force $\mathbf{f} = (30.000, 3.0000, -9000.0)N$. Its mass is known as $m = 52.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(-1.9975ms^{-2}, 747.69km/h^2, 554.32ms^{-2})$.
B. The accelaration is $(-1.9975ms^{-2}, 3540.9km/h^2, -173.08ms^{-2})$.
C. The accelaration is $(-1.9975ms^{-2}, 3540.9km/h^2, 554.32ms^{-2})$.
D. The accelaration is $(0.57692ms^{-2}, 3540.9km/h^2, -173.08ms^{-2})$.
E. The accelaration is $(-1.9975ms^{-2}, 747.69km/h^2, -173.08ms^{-2})$.
F. The accelaration is $(0.57692ms^{-2}, 3540.9km/h^2, 554.32ms^{-2})$.
G. None of these.

YOUR MARKS	Full Marks
	3.12

QUESTION 26.5

An object is subjected to an external net force $\mathbf{f} = (20.0, 7.0, -9000.0)N$. Its mass is known as $m = 54.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(0.370, 0.26, -166.67)ms^{-2}$.
B. The accelaration is $(4.13, 0.26, 397.85)ms^{-2}$.
C. The accelaration is $(4.13, 0.13, -166.67)ms^{-2}$.
D. The accelaration is $(0.370, 0.26, 397.85)ms^{-2}$.
E. The accelaration is $(0.370, 0.13, 397.85)ms^{-2}$.
F. The accelaration is $(0.370, 0.13, -166.67)ms^{-2}$.
G. The accelaration is $(4.13, 0.13, 397.85)ms^{-2}$.
H. The accelaration is $(4.13, 0.26, -166.67)ms^{-2}$.

YOUR MARKS	Full Marks
	3.12

QUESTION 26.6

Considering case-insensitivity, please match the following same strings.

Column Left	Column Right	Your choinces
A. A	a	
B. C	eR	
C. er	ER	
D. Er	c	
E. asdf(:)	ASDF(:)	

You have done all the above? Excellent! Not much left, please continue.

YOUR MARKS	Full Marks
	12.50

QUESTION 26.7

An object is subjected to an external net force $\mathbf{f} = (90.0, 9.0, -5000.0)N$. Its mass is known as $m = 54.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(1.67, 0.17, -92.593)ms^{-2}$.
B. The accelaration is $(4.19, 0.17, -92.593)ms^{-2}$.
C. The accelaration is $(4.19, -0.58, 242.38)ms^{-2}$.
D. The accelaration is $(1.67, 0.17, 242.38)ms^{-2}$.

YOUR MARKS	Full Marks
	12.50

QUESTION 26.8

$$\begin{pmatrix} 4 & 7 & 5 & 4 \\ 4 & 4 & 4 & 4 \\ 5 & 6 & 5 & 5 \end{pmatrix} \times \begin{pmatrix} 2 \\ 2 \\ 2 \\ 2 \end{pmatrix} =?$$

$$\begin{pmatrix} \Theta & \zeta \\ \Phi & \eta \\ \Theta & \Upsilon \\ \Delta & \Xi \end{pmatrix} \begin{pmatrix} \beta \\ \gamma \end{pmatrix} =?$$

YOUR MARKS	Full Marks
	1.56

QUESTION 26.9

Please solve the following equation:

$$-11 \times x^2 - 154 \times x - 539 = 0$$

Here are still some constants for use:

Constant	Symbol	Value
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Boltzmann's constant	k	1.381×10^{-23} J/K

Thank you very much for answering these questions!

Please be advised that in this paper there are questions from 26.1 through 26.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

***** END OF PAPER, THANKS *****

By: 239 (26 , 34)

YOUR NAME (FIRST, ... LAST)	YOUR ID INFORMATION

YOUR TOTAL MARKS	TOTAL FULL MARKS
	100.00

THIS IS AN EXAMPLE OF PERSONALIZED TESTS.

If needed, please use the following constants.

Constant	Symbol	Value
Acceleration due to earth's gravity	g	9.80 m/s^2
Avogadro's number	N_A	6.0221367×10^{23} mol^{-1}
Boltzmann's constant	k	1.380658×10^{-23} J/K
Coulomb's constant	k	8.99×10^{9} N·m^2/C^2
Electron charge magnitiude	e	$1.60217733 \times 10^{-19}$ C
Permeability of free space	μ_0	$1.25663706 \times 10^{-6}$ T·m/A
Permittivity of free space	ϵ_0	$8.854187817 \times 10^{-12}$ C^2/(N·m^2)
Pi	π	3.14159265
Planck's constant	h	$6.6260755 \times 10^{-34}$ J·s
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg
Mass of neutron	m_n	$1.6749286 \times 10^{-27}$ kg
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Speed of light in vacuum	c	299792458. m/s
Universal gravitational constant	G	6.67259×10^{-11} N·m^2/kg^2
Universal gas constant	R	8.314510 J/(mol·K)

Please be advised that in this paper there are questions from 27.1 through 27.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

YOUR MARKS	Full Marks
	62.50

QUESTION 27.1

Please answer ONLY 5 of the following 6 questions (Questions 27.1.1 through 27.1.6).

Here are still some constants for use in the following questions:

Constant	Symbol	Value
Boltzmann's constant	k	1.381×10^{-23} J/K
Avogadro's number	N_A	6.022×10^{23} mol^{-1}
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg

Your marks	Full marks
	12.50

Question 27.1.1

An object is subjected to an external net force $\mathbf{f} = (40.0, 7.0, -7000.0)N$. Its mass is known as $m = 52.0kg$. Please calculate its accelaration.

Your marks	Full marks
	12.50

Question 27.1.2

See the following picture.
Which one of the following is missing in it?

Your choice

A. An air-boat
B. Lawn
C. A frisbee
D. A table
E. A truck
F. Not any of aboves.

Your marks	Full marks
	12.50

Question 27.1.3

An object is subjected to an external net force $\mathbf{f} = (30.0, 6.0, -6000.0)N$. Its mass is known as $m = 56.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration (vector) is $(33534., 1388.6, 4.0588 \times 10^6)km/h^2$.
B. The accelaration (vector) is $(33534., 1388.6, -1.3886 \times 10^6)km/h^2$.
C. The accelaration (vector) is $(31572., 1388.6, 5.1924 \times 10^6)km/h^2$.
D. The accelaration (vector) is $(31572., 1388.6, 4.0588 \times 10^6)km/h^2$.
E. The accelaration (vector) is $(33534., 1388.6, -4.2089 \times 10^6)km/h^2$.
F. The accelaration (vector) is $(32936., 1388.6, -1.3886 \times 10^6)km/h^2$.
G. The accelaration (vector) is $(32936., 1388.6, 5.1924 \times 10^6)km/h^2$.
H. The accelaration (vector) is $(6942.9, 1388.6, 4.0588 \times 10^6)km/h^2$.
I. The accelaration (vector) is $(6942.9, 1388.6, -4.2089 \times 10^6)km/h^2$.
J. The accelaration (vector) is $(33534., 1388.6, 5.1924 \times 10^6)km/h^2$.
K. The accelaration (vector) is $(6942.9, 1388.6, -1.3886 \times 10^6)km/h^2$.
L. The accelaration (vector) is $(32936., 1388.6, 4.0588 \times 10^6)km/h^2$.

Your marks	Full marks
	12.50

Question 27.1.4

An object is subjected to an external net force $\mathbf{f} = (20.0, 6.0, -3000.0)N$. Its mass is known as $m = 52.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(-1.3940ms^{-2}, 0.11538ms^{-2}, 1.7163 \times 10^6 km/h^2)$.
B. The accelaration is $(-1.3940ms^{-2}, 0.50998ms^{-2}, 1.7163 \times 10^6 km/h^2)$.
C. The accelaration is $(0.38462ms^{-2}, 0.11538ms^{-2}, -747692.km/h^2)$.
D. The accelaration is $(0.38462ms^{-2}, 0.50998ms^{-2}, 1.7163 \times 10^6 km/h^2)$.
E. none of these.

Your marks	Full marks
	12.50

Question 27.1.5

What is the operation between $a = 7$ and $b = 6$: $a \times b =$? Please also calculate it.

Your marks	Full marks
	12.50

Question 27.1.6

In a hotel, the possiblity of non-smoking customer is $a = 7.0 \times 10^{-2}$, and the possiblity of equal or above 30 years old customer is $b = 0.6800$. Please calculate the possiblity of smoking and under 30 years old customer.

You have done all the above? A very good beginning, please go ahead.

More constants the Mass of electron m_e= 9.109390 $\times 10^{-31}$ kg , Universal gas constant R= 8.315 J/(mol·K) , e= 1.60217733 $\times 10^{-19}$ C , and m_p= 1.6726231 $\times 10^{-27}$ kg may be very helpful.

YOUR MARKS	Full Marks
	3.12

QUESTION 27.2

An object is subjected to an external net force $\mathbf{f} = (40.0, 9.0, -7000.0)N$. Its mass is known as $m = 58.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(0.690, 0.16, -120.69)ms^{-2}$.
B. The accelaration is $(-2.04, 0.46, 576.39)ms^{-2}$.
C. The accelaration is $(-2.04, 0.46, -120.69)ms^{-2}$.
D. The accelaration is $(0.690, 0.46, -120.69)ms^{-2}$.
E. The accelaration is $(-2.04, 0.16, -120.69)ms^{-2}$.
F. The accelaration is $(0.690, 0.46, 576.39)ms^{-2}$.
G. The accelaration is $(0.690, 0.16, 576.39)ms^{-2}$.
H. The accelaration is $(-2.04, 0.16, 576.39)ms^{-2}$.

YOUR MARKS	Full Marks
	1.56

QUESTION 27.3

Please choose the correct one from the following statements:

Your choice

A. Canada has 35 provinces and 34 territories.
B. Canada has 37 provinces and 37 territories.
C. Canada has 34 provinces and 39 territories.
D. Canada has 33 provinces and 38 territories.
E. Canada has 10 provinces and 3 territories.
F. None of above.

YOUR MARKS	Full Marks
	1.56

QUESTION 27.4

An object is subjected to an external net force $\mathbf{f} = (40.000, 3.0000, -3000.0)N$.

Its mass is known as $m = 54.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(0.74074ms^{-2}, 720.00km/h^2, -55.556ms^{-2})$.
B. The accelaration is $(3.0767ms^{-2}, 720.00km/h^2, 237.05ms^{-2})$.
C. The accelaration is $(3.0767ms^{-2}, 3596.1km/h^2, -55.556ms^{-2})$.
D. The accelaration is $(0.74074ms^{-2}, 3596.1km/h^2, 237.05ms^{-2})$.
E. The accelaration is $(0.74074ms^{-2}, 3596.1km/h^2, -55.556ms^{-2})$.
F. The accelaration is $(3.0767ms^{-2}, 720.00km/h^2, -55.556ms^{-2})$.
G. None of these.

YOUR MARKS	Full Marks
	3.12

QUESTION 27.5

Considering case-insensitivity, please match the following same strings.

Column Left	Column Right	Your choinces
A. C	eR	
B. A= 2/ 2	a= 1	
C. yjh	ER	
D. Er	YJH	
E. er	c	

YOUR MARKS	Full Marks
	1.56

QUESTION 27.6

If any one of the following statements is correct, please fill the box ahead of it with T . If wrong, fill with F.

Your answer	

1. 22 is an odd number.

Your answer	

2. Toronto is in Ontario province.

Your answer	

3. $\mathbf{F} = m\mathbf{a}$ is a mathmatical form of the Newton's Second Law.

You have done all the above? Excellent! Not much left, please continue.

YOUR MARKS	Full Marks
	12.50

QUESTION 27.7

$$\begin{pmatrix} 5 & 4 & 5 & 4 \\ 5 & 6 & 5 & 6 \\ 5 & 6 & 6 & 5 \end{pmatrix} \times \begin{pmatrix} 2 \\ 2 \\ 2 \\ 2 \end{pmatrix} =?$$

$$\begin{pmatrix} \Phi & \Phi \\ \Gamma & \alpha \\ \varepsilon & \Gamma \\ \alpha & \sigma \end{pmatrix} \begin{pmatrix} \beta \\ \beta \end{pmatrix} =?$$

YOUR MARKS	Full Marks
	12.50

QUESTION 27.8

An object is subjected to an external net force $\mathbf{f} = (70.0, 6.0, -6000.0)N$. Its mass is known as $m = 56.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(1.25, 0.39, -404.27)ms^{-2}$.
B. The accelaration is $(1.25, 0.11, -107.14)ms^{-2}$.
C. The accelaration is $(-3.60, 0.11, -107.14)ms^{-2}$.
D. The accelaration is $(-3.60, 0.11, -404.27)ms^{-2}$.

YOUR MARKS	Full Marks
	1.56

QUESTION 27.9

Please solve the following equation:

$$7 \times x^2 - 252 \times x + 1925 = 0$$

Here are still some constants for use:

Constant	Symbol	Value
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Boltzmann's constant	k	1.381×10^{-23} J/K

Thank you very much for answering these questions!

Please be advised that in this paper there are questions from 27.1 through 27.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

***** END OF PAPER, THANKS *****

By: 239 (26 , 34)

YOUR NAME (FIRST, ... LAST)	YOUR ID INFORMATION

YOUR TOTAL MARKS	TOTAL FULL MARKS
	100.00

THIS IS AN EXAMPLE OF PERSONALIZED TESTS.

If needed, please use the following constants.

Constant	Symbol	Value
Acceleration due to earth's gravity	g	9.80 m/s^2
Avogadro's number	N_A	6.0221367×10^{23} mol^{-1}
Boltzmann's constant	k	1.380658×10^{-23} J/K
Coulomb's constant	k	8.99×10^{9} N·m^2/C^2
Electron charge magnitiude	e	$1.60217733 \times 10^{-19}$ C
Permeability of free space	μ_0	$1.25663706 \times 10^{-6}$ T·m/A
Permittivity of free space	ϵ_0	$8.854187817 \times 10^{-12}$ C^2/(N·m^2)
Pi	π	3.14159265
Planck's constant	h	$6.6260755 \times 10^{-34}$ J·s
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg
Mass of neutron	m_n	$1.6749286 \times 10^{-27}$ kg
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Speed of light in vacuum	c	299792458. m/s
Universal gravitational constant	G	6.67259×10^{-11} N·m^2/kg^2
Universal gas constant	R	8.314510 J/(mol·K)

Please be advised that in this paper there are questions from 28.1 through 28.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

YOUR MARKS	Full Marks
	62.50

QUESTION 28.1

Please answer ONLY 5 of the following 6 questions (Questions 28.1.1 through 28.1.6).

Here are still some constants for use in the following questions:

Constant	Symbol	Value
Boltzmann's constant	k	1.381×10^{-23} J/K
Avogadro's number	N_A	6.022×10^{23} mol^{-1}
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg

Your marks	Full marks
	12.50

Question 28.1.1

An object is subjected to an external net force $\mathbf{f} = (80.0, 6.0, -7000.0)N$. Its mass is known as $m = 58.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(1.3793ms^{-2}, 0.44087ms^{-2}, -6.5340 \times 10^6 km/h^2)$.
B. The accelaration is $(1.3793ms^{-2}, 0.44087ms^{-2}, -1.5641 \times 10^6 km/h^2)$.
C. The accelaration is $(6.0670ms^{-2}, 0.10345ms^{-2}, -1.5641 \times 10^6 km/h^2)$.
D. The accelaration is $(6.0670ms^{-2}, 0.44087ms^{-2}, -6.5340 \times 10^6 km/h^2)$.
E. none of these.

Your marks	Full marks
	12.50

Question 28.1.2

An object is subjected to an external net force $\mathbf{f} = (30.0, 2.0, -9000.0)N$. Its mass is known as $m = 54.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration (vector) is $(30346., 480.00, 7.4382 \times 10^6) km/h^2$.
B. The accelaration (vector) is $(33869., 480.00, 7.4382 \times 10^6) km/h^2$.
C. The accelaration (vector) is $(30346., 480.00, 8.5317 \times 10^6) km/h^2$.
D. The accelaration (vector) is $(33869., 480.00, -2.1600 \times 10^6) km/h^2$.
E. The accelaration (vector) is $(35630., 480.00, -2.1600 \times 10^6) km/h^2$.
F. The accelaration (vector) is $(7200.0, 480.00, 7.4382 \times 10^6) km/h^2$.
G. The accelaration (vector) is $(7200.0, 480.00, 7.2656 \times 10^6) km/h^2$.
H. The accelaration (vector) is $(7200.0, 480.00, -2.1600 \times 10^6) km/h^2$.
I. The accelaration (vector) is $(30346., 480.00, 7.2656 \times 10^6) km/h^2$.
J. The accelaration (vector) is $(35630., 480.00, 8.5317 \times 10^6) km/h^2$.
K. The accelaration (vector) is $(33869., 480.00, 8.5317 \times 10^6) km/h^2$.
L. The accelaration (vector) is $(7200.0, 480.00, 8.5317 \times 10^6) km/h^2$.

Your marks	Full marks
	12.50

Question 28.1.3

An object is subjected to an external net force $\mathbf{f} = (50.0, 4.0, -6000.0)N$. Its mass is known as $m = 58.0kg$. Please calculate its accelaration.

Your marks	Full marks
	12.50

Question 28.1.4

What is the operation between $a = 5$ and $b = 8$: $a - b =$? Please also calculate it.

Your marks	Full marks
	12.50

Question 28.1.5

In a hotel, the possiblity of smoking customer is $a = 0.600$, and the possiblity of equal or above 30 years old customer is $b = 0.9800$. Please calculate the possiblity of non-smoking and under 30 years old customer.

Your marks	Full marks
	12.50

Question 28.1.6

In a hotel, the possiblity of non-smoking customer is $a = 0.770$, and the possiblity of equal-or-above 30 years old customer is $b = 0.1400$. Please fill the following form.

Customer	Possibility
smoking and equal-or-above 30 years old	
smoking and under 30 years old	
non-smoking and equal-or-above 30 years old	
non-smoking and under 30 years old	

You have done all the above? A very good beginning, please go ahead. More constants the Mass of electron m_e= 9.109390×10^{-31} kg , Universal gas constant R= 8.315 J/(mol·K) , e= $1.60217733 \times 10^{-19}$ C , and m_p= $1.6726231 \times 10^{-27}$ kg may be very helpful.

YOUR MARKS	Full Marks
	1.56

QUESTION 28.2

If any one of the following statements is correct, please fill the box ahead of it with T . If wrong, fill with F.

Your answer	

1. 53 is an even number.

Your answer	

2. Kingston is in Ontario province.

Your answer	

3. $|\mathbf{F}| = Gm_1m_2r^{-2}$ is a mathmatical form of the Newton's Second Law.

YOUR MARKS	Full Marks
	1.56

QUESTION 28.3

Please choose the correct one from the following statements:

Your choice

A. Canada has 34 provinces and 39 territories.
B. Canada has 37 provinces and 37 territories.
C. Canada has 33 provinces and 38 territories.
D. Canada has 10 provinces and 3 territories.
E. Canada has 35 provinces and 34 territories.
F. None of above.

YOUR MARKS	Full Marks
	1.56

QUESTION 28.4

An object is subjected to an external net force $\mathbf{f} = (80.000, 7.0000, -9000.0)N$. Its mass is known as $m = 52.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(1.5385ms^{-2}, 1744.6km/h^2, 461.11ms^{-2})$.
B. The accelaration is $(-6.2715ms^{-2}, 1744.6km/h^2, -173.08ms^{-2})$.
C. The accelaration is $(-6.2715ms^{-2}, -8229.0km/h^2, -173.08ms^{-2})$.
D. The accelaration is $(-6.2715ms^{-2}, 1744.6km/h^2, 461.11ms^{-2})$.
E. The accelaration is $(-6.2715ms^{-2}, -8229.0km/h^2, 461.11ms^{-2})$.
F. The accelaration is $(1.5385ms^{-2}, -8229.0km/h^2, 461.11ms^{-2})$.
G. None of these.

YOUR MARKS	Full Marks
	3.12

QUESTION 28.5

An object is subjected to an external net force $\mathbf{f} = (80.0, 9.0, -7000.0)N$. Its mass is known as $m = 50.0000kg$. Please choose the correct accelaration

from the following choices.

Your choice

A. The accelaration is $(4.22, 0.18, 415.24)ms^{-2}$.
B. The accelaration is $(4.22, -0.54, 415.24)ms^{-2}$.
C. The accelaration is $(1.60, -0.54, -140.00)ms^{-2}$.
D. The accelaration is $(4.22, -0.54, -140.00)ms^{-2}$.
E. The accelaration is $(1.60, 0.18, 415.24)ms^{-2}$.
F. The accelaration is $(4.22, 0.18, -140.00)ms^{-2}$.
G. The accelaration is $(1.60, 0.18, -140.00)ms^{-2}$.
H. The accelaration is $(1.60, -0.54, 415.24)ms^{-2}$.

YOUR MARKS	Full Marks
	3.12

QUESTION 28.6

Considering case-insensitivity, please match the following same strings.

Column Left	Column Right	Your choinces
A. C	YJH	
B. Er	eR	
C. A	ER	
D. yjh	a	
E. er	c	

You have done all the above? Excellent! Not much left, please continue.

YOUR MARKS	Full Marks
	12.50

QUESTION 28.7

$$\begin{pmatrix} 5 & 5 & 5 & 7 \\ 4 & 6 & 6 & 6 \\ 6 & 6 & 6 & 5 \end{pmatrix} \times \begin{pmatrix} 2 \\ 2 \\ 2 \\ 2 \end{pmatrix} =?$$

$$\begin{pmatrix} \eta & \Phi \\ \sigma & \Delta \\ \Psi & \Psi \\ \Gamma & \sigma \end{pmatrix} \begin{pmatrix} \beta \\ \gamma \end{pmatrix} =?$$

YOUR MARKS	Full Marks
	12.50

QUESTION 28.8

An object is subjected to an external net force $\mathbf{f} = (80.0, 6.0, -4000.0)N$. Its mass is known as $m = 56.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(2.88, 0.11, -71.429)ms^{-2}$.
B. The accelaration is $(1.43, 0.11, 251.90)ms^{-2}$.
C. The accelaration is $(1.43, 0.11, -71.429)ms^{-2}$.
D. The accelaration is $(2.88, -0.33, 251.90)ms^{-2}$.

YOUR MARKS	Full Marks
	1.56

QUESTION 28.9

Please solve the following equation:

$$-11 \times x^2 + 539 \times x - 5984 = 0$$

Here are still some constants for use:

Constant	Symbol	Value
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Boltzmann's constant	k	1.381×10^{-23} J/K

Thank you very much for answering these questions!

Please be advised that in this paper there are questions from 28.1 through 28.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

***** END OF PAPER, THANKS *****

By: 239 (26 , 34)

YOUR NAME (FIRST, ... LAST)	YOUR ID INFORMATION

YOUR TOTAL MARKS	TOTAL FULL MARKS
	100.00

THIS IS AN EXAMPLE OF PERSONALIZED TESTS.

If needed, please use the following constants.

Constant	Symbol	Value
Acceleration due to earth's gravity	g	9.80 m/s^2
Avogadro's number	N_A	6.0221367×10^{23} mol^{-1}
Boltzmann's constant	k	1.380658×10^{-23} J/K
Coulomb's constant	k	8.99×10^{9} N·m^2/C^2
Electron charge magnitiude	e	$1.60217733 \times 10^{-19}$ C
Permeability of free space	μ_0	$1.25663706 \times 10^{-6}$ T·m/A
Permittivity of free space	ϵ_0	$8.854187817 \times 10^{-12}$ C^2/(N·m^2)
Pi	π	3.14159265
Planck's constant	h	$6.6260755 \times 10^{-34}$ J·s
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg
Mass of neutron	m_n	$1.6749286 \times 10^{-27}$ kg
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Speed of light in vacuum	c	299792458. m/s
Universal gravitational constant	G	6.67259×10^{-11} N·m^2/kg^2
Universal gas constant	R	8.314510 J/(mol·K)

Please be advised that in this paper there are questions from 29.1 through 29.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

YOUR MARKS	Full Marks
	62.50

QUESTION 29.1

Please answer ONLY 5 of the following 6 questions (Questions 29.1.1 through 29.1.6).

Here are still some constants for use in the following questions:

Constant	Symbol	Value
Boltzmann's constant	k	1.381×10^{-23} J/K
Avogadro's number	N_A	6.022×10^{23} mol^{-1}
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg

Your marks	Full marks
	12.50

Question 29.1.1

An object is subjected to an external net force $\mathbf{f} = (50.0, 7.0, -5000.0)N$. Its mass is known as $m = 52.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration (vector) is $(53724., 1744.6, 4.2009 \times 10^6)km/h^2$.
B. The accelaration (vector) is $(53724., 1744.6, -4.5702 \times 10^6)km/h^2$.
C. The accelaration (vector) is $(56648., 1744.6, -1.2462 \times 10^6)km/h^2$.
D. The accelaration (vector) is $(12462., 1744.6, 4.9047 \times 10^6)km/h^2$.
E. The accelaration (vector) is $(56648., 1744.6, 4.9047 \times 10^6)km/h^2$.
F. The accelaration (vector) is $(12462., 1744.6, -1.2462 \times 10^6)km/h^2$.
G. The accelaration (vector) is $(53724., 1744.6, 4.9047 \times 10^6)km/h^2$.
H. The accelaration (vector) is $(56648., 1744.6, 4.2009 \times 10^6)km/h^2$.
I. The accelaration (vector) is $(50025., 1744.6, -1.2462 \times 10^6)km/h^2$.
J. The accelaration (vector) is $(56648., 1744.6, -4.5702 \times 10^6)km/h^2$.
K. The accelaration (vector) is $(12462., 1744.6, -4.5702 \times 10^6)km/h^2$.
L. The accelaration (vector) is $(50025., 1744.6, 4.9047 \times 10^6)km/h^2$.

Your marks	Full marks
	12.50

Question 29.1.2

What is the operation between $a = 5$ and $b = 6$: $a \times b =$? Please also calculate it.

Your marks	Full marks
	12.50

Question 29.1.3

In a hotel, the possiblity of smoking customer is $a = 0.230$, and the possiblity of equal-or-above 30 years old customer is $b = 0.5600$. Please fill the following form.

Customer	Possibility
smoking and equal-or-above 30 years old	
smoking and under 30 years old	
non-smoking and equal-or-above 30 years old	
non-smoking and under 30 years old	

Your marks	Full marks
	12.50

Question 29.1.4

An object is subjected to an external net force $\mathbf{f} = (60.0, 5.0, -4000.0)N$. Its mass is known as $m = 54.0kg$. Please calculate its accelaration.

Your marks	Full marks
	12.50

Question 29.1.5

An object is subjected to an external net force $\mathbf{f} = (60.0, 6.0, -3000.0)N$. Its mass is known as $m = 54.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(1.1111ms^{-2}, 0.42695ms^{-2}, -2.1061 \times 10^6 km/h^2)$.
B. The accelaration is $(1.1111ms^{-2}, 0.11111ms^{-2}, -2.1061 \times 10^6 km/h^2)$.
C. The accelaration is $(2.7139ms^{-2}, 0.42695ms^{-2}, -2.1061 \times 10^6 km/h^2)$.
D. The accelaration is $(1.1111ms^{-2}, 0.11111ms^{-2}, -720000.km/h^2)$.
E. none of these.

Your marks	Full marks
	12.50

Question 29.1.6

In a hotel, the possiblity of smoking customer is $a = 0.770$, and the possiblity of under 30 years old customer is $b = 0.7000$. Please calculate the possiblity of non-smoking and equal or above 30 years old customer.

You have done all the above? A very good beginning, please go ahead.

More constants the Mass of electron m_e= 9.109390×10^{-31} kg , Universal gas constant R= 8.315 J/(mol·K) , e= $1.60217733 \times 10^{-19}$ C , and m_p= $1.6726231 \times 10^{-27}$ kg may be very helpful.

YOUR MARKS	Full Marks
	3.12

QUESTION 29.2

An object is subjected to an external net force $\mathbf{f} = (50.0, 4.0, -6000.0)N$. Its mass is known as $m = 52.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(0.962, 7.7 \times 10^{-2}, 427.13)ms^{-2}$.
B. The accelaration is $(4.16, 0.20, -115.38)ms^{-2}$.
C. The accelaration is $(4.16, 0.20, 427.13)ms^{-2}$.
D. The accelaration is $(4.16, 7.7 \times 10^{-2}, -115.38)ms^{-2}$.

E. The accelaration is $(0.962, 7.7 \times 10^{-2}, -115.38)ms^{-2}$.
F. The accelaration is $(4.16, 7.7 \times 10^{-2}, 427.13)ms^{-2}$.
G. The accelaration is $(0.962, 0.20, -115.38)ms^{-2}$.
H. The accelaration is $(0.962, 0.20, 427.13)ms^{-2}$.

YOUR MARKS	Full Marks
	1.56

QUESTION 29.3

An object is subjected to an external net force $\mathbf{f} = (50.000, 3.0000, -4000.0)N$. Its mass is known as $m = 54.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(0.92593ms^{-2}, 720.00km/h^2, -74.074ms^{-2})$.
B. The accelaration is $(4.5878ms^{-2}, -3482.9km/h^2, -74.074ms^{-2})$.
C. The accelaration is $(4.5878ms^{-2}, 720.00km/h^2, 346.91ms^{-2})$.
D. The accelaration is $(4.5878ms^{-2}, 720.00km/h^2, -74.074ms^{-2})$.
E. The accelaration is $(0.92593ms^{-2}, 720.00km/h^2, 346.91ms^{-2})$.
F. The accelaration is $(0.92593ms^{-2}, -3482.9km/h^2, 346.91ms^{-2})$.
G. None of these.

YOUR MARKS	Full Marks
	3.12

QUESTION 29.4

Considering case-insensitivity, please match the following same strings.

Column Left	Column Right	Your choinces
A. B	ER	
B. yjh	a	
C. A= 4/ 2	b	
D. A	a= 2	
E. er	YJH	

YOUR MARKS	Full Marks
	1.56

QUESTION 29.5

Please choose the correct one from the following statements:

Your choice

A. Canada has 10 provinces and 3 territories.
B. Canada has 33 provinces and 38 territories.
C. Canada has 34 provinces and 39 territories.
D. Canada has 37 provinces and 37 territories.
E. Canada has 35 provinces and 34 territories.
F. None of above.

YOUR MARKS	Full Marks
	1.56

QUESTION 29.6

If any one of the following statements is correct, please fill the box ahead of it with T . If wrong, fill with F.

Your answer	

1. 69 is an odd number.

Your answer	

2. Montreal is in Ontario province.

Your answer	

3. $\mathbf{F} = m\mathbf{a}$ is a mathmatical form of the Newton's Second Law.

You have done all the above? Excellent! Not much left, please continue.

YOUR MARKS	Full Marks
	12.50

QUESTION 29.7

$$\begin{pmatrix} 4 & 5 & 6 & 6 \\ 6 & 7 & 4 & 4 \\ 6 & 5 & 4 & 6 \end{pmatrix} \times \begin{pmatrix} 2 \\ 2 \\ 2 \\ 2 \end{pmatrix} =?$$

$$\begin{pmatrix} \delta & \beta \\ \Phi & \Gamma \\ \Delta & \Psi \\ \Psi & \Xi \end{pmatrix} \begin{pmatrix} \beta \\ \beta \end{pmatrix} =?$$

YOUR MARKS	Full Marks
	12.50

QUESTION 29.8

An object is subjected to an external net force $\mathbf{f} = (50.0, 3.0, -3000.0)N$. Its mass is known as $m = 58.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(2.38, 5.2 \times 10^{-2}, -51.724)ms^{-2}$.
B. The accelaration is $(0.862, -0.17, -51.724)ms^{-2}$.
C. The accelaration is $(0.862, 5.2 \times 10^{-2}, 227.14)ms^{-2}$.
D. The accelaration is $(0.862, 5.2 \times 10^{-2}, -51.724)ms^{-2}$.

YOUR MARKS	Full Marks
	1.56

QUESTION 29.9

Please solve the following equation:

$$11 \times x^2 - 671 \times x + 10208 = 0$$

Here are still some constants for use:

Constant	Symbol	Value
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Boltzmann's constant	k	1.381×10^{-23} J/K

Thank you very much for answering these questions!

Please be advised that in this paper there are questions from 29.1 through 29.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

***** END OF PAPER, THANKS *****

By: 239 (26 , 34)

YOUR NAME (FIRST, ... LAST)	YOUR ID INFORMATION

YOUR TOTAL MARKS	TOTAL FULL MARKS
	100.00

THIS IS AN EXAMPLE OF PERSONALIZED TESTS.

If needed, please use the following constants.

Constant	Symbol	Value
Acceleration due to earth's gravity	g	9.80 m/s^2
Avogadro's number	N_A	6.0221367×10^{23} mol^{-1}
Boltzmann's constant	k	1.380658×10^{-23} J/K
Coulomb's constant	k	8.99×10^{9} N·m^2/C^2
Electron charge magnitiude	e	$1.60217733 \times 10^{-19}$ C
Permeability of free space	μ_0	$1.25663706 \times 10^{-6}$ T·m/A
Permittivity of free space	ϵ_0	$8.854187817 \times 10^{-12}$ C^2/(N·m^2)
Pi	π	3.14159265
Planck's constant	h	$6.6260755 \times 10^{-34}$ J·s
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg
Mass of neutron	m_n	$1.6749286 \times 10^{-27}$ kg
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Speed of light in vacuum	c	299792458. m/s
Universal gravitational constant	G	6.67259×10^{-11} N·m^2/kg^2
Universal gas constant	R	8.314510 J/(mol·K)

Please be advised that in this paper there are questions from 30.1 through 30.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

YOUR MARKS	Full Marks
	62.50

QUESTION 30.1

Please answer ONLY 5 of the following 6 questions (Questions 30.1.1 through 30.1.6).

Here are still some constants for use in the following questions:

Constant	Symbol	Value
Boltzmann's constant	k	1.381×10^{-23} J/K
Avogadro's number	N_A	6.022×10^{23} mol^{-1}
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg

Your marks	Full marks
	12.50

Question 30.1.1

See the following picture.
Which one of the following is missing in it?

Your choice

A. An airplane
B. An air-boat
C. Lawn
D. A frisbee
E. A truck

F. Not any of aboves.

Your marks	Full marks
	12.50

Question 30.1.2

In a hotel, the possiblity of smoking customer is $a = 0.730$, and the possiblity of equal-or-above 30 years old customer is $b = 0.7600$. Please fill the following form.

Customer	Possibility
smoking and equal-or-above 30 years old	
smoking and under 30 years old	
non-smoking and equal-or-above 30 years old	
non-smoking and under 30 years old	

Your marks	Full marks
	12.50

Question 30.1.3

An object is subjected to an external net force $\mathbf{f} = (80.0, 2.0, -7000.0)N$. Its mass is known as $m = 58.0kg$. Please calculate its accelaration.

Your marks	Full marks
	12.50

Question 30.1.4

Let us use Newton's Law of Universal Gravitation to calculate the force of the Sun acting on the eight planets. Let us suppose the mass of the Sun is $3.00 \times 10^{24}kg$. With the mass and the distance to the Sun of each planet in the following table, please fill the blanks for the forces.

The Planet	Mass (kg)	Distanace from Sun (m)	The Force (N)
Mercury	$3.00000000 \times 10^{24}$	$7.000000000 \times 10^{24}$	
Venus	3.00×10^{24}	5.00×10^{24}	
Earth	9.00×10^{24}	8.00×10^{24}	
Mars	9.00×10^{24}	3.00×10^{24}	
Jupiter	7.00×10^{24}	5.00×10^{24}	
Saturn	1.000×10^{25}	8.00×10^{24}	
Uranus	6.00×10^{24}	9.00×10^{24}	
Neptune	6.00×10^{24}	7.00×10^{24}	

Your marks	Full marks
	12.50

Question 30.1.5

An object is subjected to an external net force $\mathbf{f} = (60.0, 6.0, -3000.0)N$. Its mass is known as $m = 56.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(2.9098ms^{-2}, 0.10714ms^{-2}, 1.9567 \times 10^{6}km/h^{2})$.
B. The accelaration is $(1.0714ms^{-2}, 0.46937ms^{-2}, -694286.km/h^{2})$.
C. The accelaration is $(1.0714ms^{-2}, 0.10714ms^{-2}, -694286.km/h^{2})$.
D. The accelaration is $(2.9098ms^{-2}, 0.46937ms^{-2}, 1.9567 \times 10^{6}km/h^{2})$.
E. none of these.

Your marks	Full marks
	12.50

Question 30.1.6

An object is subjected to an external net force $\mathbf{f} = (30.0, 2.0, -6000.0)N$. Its mass is known as $m = 54.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration (vector) is $(7200.0, 480.00, -4.7594 \times 10^6) km/h^2$.
B. The accelaration (vector) is $(7200.0, 480.00, -1.4400 \times 10^6) km/h^2$.
C. The accelaration (vector) is $(27380., 480.00, 3.7975 \times 10^6) km/h^2$.
D. The accelaration (vector) is $(-20827., 480.00, 7.0625 \times 10^6) km/h^2$.
E. The accelaration (vector) is $(27380., 480.00, -4.7594 \times 10^6) km/h^2$.
F. The accelaration (vector) is $(-20827., 480.00, 3.7975 \times 10^6) km/h^2$.
G. The accelaration (vector) is $(27380., 480.00, -1.4400 \times 10^6) km/h^2$.
H. The accelaration (vector) is $(31230., 480.00, -1.4400 \times 10^6) km/h^2$.
I. The accelaration (vector) is $(7200.0, 480.00, 7.0625 \times 10^6) km/h^2$.
J. The accelaration (vector) is $(27380., 480.00, 7.0625 \times 10^6) km/h^2$.
K. The accelaration (vector) is $(31230., 480.00, 3.7975 \times 10^6) km/h^2$.
L. The accelaration (vector) is $(7200.0, 480.00, 3.7975 \times 10^6) km/h^2$.

You have done all the above? A very good beginning, please go ahead.

More constants the Mass of electron m_e= 9.109390×10^{-31} kg , Universal gas constant R= 8.315 J/(mol·K) , e= $1.60217733 \times 10^{-19}$ C , and m_p= $1.6726231 \times 10^{-27}$ kg may be very helpful.

YOUR MARKS	Full Marks
	1.56

QUESTION 30.2

If any one of the following statements is correct, please fill the box ahead of it with T . If wrong, fill with F.

Your answer	

1. 28 is an even number.

Your answer	

2. Montreal is in Ontario province.

Your answer	

3. $\mathbf{F} = m\mathbf{a}$ is a mathmatical form of the Newton's Second Law.

YOUR MARKS	Full Marks
	1.56

QUESTION 30.3

Please choose the correct one from the following statements:

Your choice

A. Canada has 33 provinces and 38 territories.
B. Canada has 35 provinces and 34 territories.
C. Canada has 37 provinces and 37 territories.
D. Canada has 36 provinces and 35 territories.
E. Canada has 34 provinces and 39 territories.
F. None of above.

YOUR MARKS	Full Marks
	3.12

QUESTION 30.4

An object is subjected to an external net force $\mathbf{f} = (20.0, 4.0, -6000.0)N$. Its mass is known as $m = 52.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(0.385, 7.7 \times 10^{-2}, 526.04)ms^{-2}$.
B. The accelaration is $(0.385, 7.7 \times 10^{-2}, -115.38)ms^{-2}$.
C. The accelaration is $(0.385, 0.23, -115.38)ms^{-2}$.
D. The accelaration is $(4.34, 7.7 \times 10^{-2}, -115.38)ms^{-2}$.
E. The accelaration is $(4.34, 0.23, 526.04)ms^{-2}$.
F. The accelaration is $(0.385, 0.23, 526.04)ms^{-2}$.
G. The accelaration is $(4.34, 7.7 \times 10^{-2}, 526.04)ms^{-2}$.
H. The accelaration is $(4.34, 0.23, -115.38)ms^{-2}$.

YOUR MARKS	Full Marks
	3.12

QUESTION 30.5

Considering case-insensitivity, please match the following same strings.

Column Left	Column Right	Your choinces
A. A	b	
B. A= 6/ 2	ER	
C. Er	eR	
D. B	a= 3	
E. er	a	

YOUR MARKS	Full Marks
	1.56

QUESTION 30.6

An object is subjected to an external net force $\mathbf{f} = (20.000, 3.0000, -2000.0)N$. Its mass is known as $m = 60.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(0.33333ms^{-2}, 648.00km/h^2, 116.36ms^{-2})$.
B. The accelaration is $(0.33333ms^{-2}, 648.00km/h^2, -33.333ms^{-2})$.
C. The accelaration is $(0.33333ms^{-2}, 1945.9km/h^2, -33.333ms^{-2})$.
D. The accelaration is $(-0.96447ms^{-2}, 1945.9km/h^2, -33.333ms^{-2})$.
E. The accelaration is $(-0.96447ms^{-2}, 648.00km/h^2, -33.333ms^{-2})$.
F. The accelaration is $(0.33333ms^{-2}, 1945.9km/h^2, 116.36ms^{-2})$.
G. None of these.

You have done all the above? Excellent! Not much left, please continue.

YOUR MARKS	Full Marks
	12.50

QUESTION 30.7

An object is subjected to an external net force $\mathbf{f} = (60.0, 3.0, -6000.0)N$. Its mass is known as $m = 54.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(1.11, 5.6 \times 10^{-2}, -111.11) ms^{-2}$.
B. The accelaration is $(3.83, 5.6 \times 10^{-2}, -111.11) ms^{-2}$.
C. The accelaration is $(1.11, 5.6 \times 10^{-2}, 356.81) ms^{-2}$.
D. The accelaration is $(3.83, 0.19, 356.81) ms^{-2}$.

YOUR MARKS	Full Marks
	12.50

QUESTION 30.8

$$\begin{pmatrix} 4 & 6 & 7 & 5 \\ 5 & 4 & 5 & 6 \\ 5 & 4 & 5 & 6 \end{pmatrix} \times \begin{pmatrix} 2 \\ 2 \\ 2 \\ 2 \end{pmatrix} =?$$

$$\begin{pmatrix} \Lambda & \Psi \\ \sigma & \Upsilon \\ \beta & \beta \\ \Phi & \Theta \end{pmatrix} \begin{pmatrix} \beta \\ \beta \end{pmatrix} =?$$

YOUR MARKS	Full Marks
	1.56

QUESTION 30.9

Please solve the following equation:

$$-9 \times x^2 + 63 \times x + 1530 = 0$$

Here are still some constants for use:

Constant	Symbol	Value
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Boltzmann's constant	k	1.381×10^{-23} J/K

Thank you very much for answering these questions!

Please be advised that in this paper there are questions from 30.1 through 30.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

***** END OF PAPER, THANKS *****

By: 239 (26 , 34)

YOUR NAME (FIRST, ... LAST)	YOUR ID INFORMATION

YOUR TOTAL MARKS	TOTAL FULL MARKS
	100.00

THIS IS AN EXAMPLE OF PERSONALIZED TESTS.

If needed, please use the following constants.

Constant	Symbol	Value
Acceleration due to earth's gravity	g	9.80 m/s^2
Avogadro's number	N_A	6.0221367×10^{23} mol^{-1}
Boltzmann's constant	k	1.380658×10^{-23} J/K
Coulomb's constant	k	8.99×10^{9} N·m^2/C^2
Electron charge magnitiude	e	$1.60217733 \times 10^{-19}$ C
Permeability of free space	μ_0	$1.25663706 \times 10^{-6}$ T·m/A
Permittivity of free space	ϵ_0	$8.854187817 \times 10^{-12}$ C^2/(N·m^2)
Pi	π	3.14159265
Planck's constant	h	$6.6260755 \times 10^{-34}$ J·s
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg
Mass of neutron	m_n	$1.6749286 \times 10^{-27}$ kg
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Speed of light in vacuum	c	299792458. m/s
Universal gravitational constant	G	6.67259×10^{-11} N·m^2/kg^2
Universal gas constant	R	8.314510 J/(mol·K)

Please be advised that in this paper there are questions from 31.1 through 31.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

YOUR MARKS	Full Marks
	62.50

QUESTION 31.1

Please answer ONLY 5 of the following 6 questions (Questions 31.1.1 through 31.1.6).

Here are still some constants for use in the following questions:

Constant	Symbol	Value
Boltzmann's constant	k	1.381×10^{-23} J/K
Avogadro's number	N_A	6.022×10^{23} mol^{-1}
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg

Your marks	Full marks
	12.50

Question 31.1.1

In a hotel, the possiblity of smoking customer is $a = 0.240$, and the possiblity of equal or above 30 years old customer is $b = 2.00 \times 10^{-2}$. Please calculate the possiblity of non-smoking and under 30 years old customer.

Your marks	Full marks
	12.50

Question 31.1.2

An object is subjected to an external net force $\mathbf{f} = (20.0, 2.0, -4000.0)N$. Its mass is known as $m = 54.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration (vector) is $(-15958., 480.00, -960000.)km/h^2$.
B. The accelaration (vector) is $(18692., 480.00, -960000.)km/h^2$.
C. The accelaration (vector) is $(18692., 480.00, 2.0503 \times 10^6)km/h^2$.
D. The accelaration (vector) is $(-15958., 480.00, 3.2965 \times 10^6)km/h^2$.
E. The accelaration (vector) is $(18692., 480.00, -3.9936 \times 10^6)km/h^2$.
F. The accelaration (vector) is $(-15958., 480.00, -3.9936 \times 10^6)km/h^2$.
G. The accelaration (vector) is $(-15958., 480.00, 2.0503 \times 10^6)km/h^2$.
H. The accelaration (vector) is $(18692., 480.00, 3.2965 \times 10^6)km/h^2$.

I. The accelaration (vector) is $(-16677., 480.00, 2.0503 \times 10^6) km/h^2$.
J. The accelaration (vector) is $(4800.0, 480.00, -960000.) km/h^2$.
K. The accelaration (vector) is $(4800.0, 480.00, 3.2965 \times 10^6) km/h^2$.
L. The accelaration (vector) is $(-16677., 480.00, -960000.) km/h^2$.

Your marks	Full marks
	12.50

Question 31.1.3

In a hotel, the possiblity of non-smoking customer is $a = 0.910$, and the possiblity of equal-or-above 30 years old customer is $b = 0.5000$. Please fill the following form.

Customer	Possibility
smoking and equal-or-above 30 years old	
smoking and under 30 years old	
non-smoking and equal-or-above 30 years old	
non-smoking and under 30 years old	

Your marks	Full marks
	12.50

Question 31.1.4

An object is subjected to an external net force $\mathbf{f} = (30.0, 2.0, -2000.0) N$. Its mass is known as $m = 52.0 kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(2.4439 ms^{-2}, -0.18750 ms^{-2}, -1.6744 \times 10^6 km/h^2)$.
B. The accelaration is $(2.4439 ms^{-2}, 3.8462 \times 10^{-2} ms^{-2}, -1.6744 \times 10^6 km/h^2)$.
C. The accelaration is $(0.57692 ms^{-2}, -0.18750 ms^{-2}, -1.6744 \times 10^6 km/h^2)$.
D. The accelaration is $(0.57692 ms^{-2}, -0.18750 ms^{-2}, -498462. km/h^2)$.
E. none of these.

Your marks	Full marks
	12.50

Question 31.1.5

See the following picture.
Which one of the following is missing in it?

Your choice

A. An airplane
B. An air-boat
C. Lawn
D. A table
E. A frisbee
F. Not any of aboves.

Your marks	Full marks
	12.50

Question 31.1.6

An object is subjected to an external net force $\mathbf{f} = (60.0, 5.0, -6000.0)N$. Its mass is known as $m = 56.0kg$. Please calculate its accelaration.

You have done all the above? A very good beginning, please go ahead. More constants the Mass of electron m_e= 9.109390 $\times 10^{-31}$ kg , Universal gas constant R= 8.315 J/(mol·K) , e= 1.60217733 $\times 10^{-19}$ C , and m_p= 1.6726231 $\times 10^{-27}$ kg may be very helpful.

YOUR MARKS	Full Marks
	1.56

QUESTION 31.2

Please choose the correct one from the following statements:

Your choice

A. Canada has 35 provinces and 34 territories.
B. Canada has 37 provinces and 37 territories.
C. Canada has 34 provinces and 39 territories.
D. Canada has 33 provinces and 38 territories.
E. Canada has 36 provinces and 35 territories.
F. None of above.

YOUR MARKS	Full Marks
	1.56

QUESTION 31.3

An object is subjected to an external net force $\mathbf{f} = (80.000, 9.0000, -5000.0)N$. Its mass is known as $m = 52.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(5.1859ms^{-2}, 2243.1km/h^2, -96.154ms^{-2})$.
B. The accelaration is $(5.1859ms^{-2}, 4767.8km/h^2, 441.36ms^{-2})$.
C. The accelaration is $(1.5385ms^{-2}, 2243.1km/h^2, -96.154ms^{-2})$.
D. The accelaration is $(5.1859ms^{-2}, 2243.1km/h^2, 441.36ms^{-2})$.
E. The accelaration is $(1.5385ms^{-2}, 4767.8km/h^2, -96.154ms^{-2})$.
F. The accelaration is $(1.5385ms^{-2}, 2243.1km/h^2, 441.36ms^{-2})$.
G. None of these.

YOUR MARKS	Full Marks
	3.12

QUESTION 31.4

Considering case-insensitivity, please match the following same strings.

Column Left	Column Right	Your choinces
A. B	YJH	
B. asdf(:)	a= 4	
C. A= 8/ 2	c	
D. C	b	
E. yjh	ASDF(:)	

YOUR MARKS	Full Marks
	1.56

QUESTION 31.5

If any one of the following statements is correct, please fill the box ahead of it with T . If wrong, fill with F.

Your answer	

1. 50 is an even number.

Your answer	

2. Montreal is in Ontario province.

Your answer	

3. $\mathbf{F} = m\mathbf{a}$ is a mathmatical form of the Newton's Second Law.

YOUR MARKS	Full Marks
	3.12

QUESTION 31.6

An object is subjected to an external net force $\mathbf{f} = (40.0, 3.0, -6000.0)N$. Its mass is known as $m = 52.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(-1.89, 0.26, -115.38)ms^{-2}$.
B. The accelaration is $(0.769, 5.8 \times 10^{-2}, -115.38)ms^{-2}$.
C. The accelaration is $(-1.89, 5.8 \times 10^{-2}, -115.38)ms^{-2}$.

D. The accelaration is $(-1.89, 0.26, -412.14)ms^{-2}$.
E. The accelaration is $(0.769, 0.26, -115.38)ms^{-2}$.
F. The accelaration is $(0.769, 0.26, -412.14)ms^{-2}$.
G. The accelaration is $(0.769, 5.8 \times 10^{-2}, -412.14)ms^{-2}$.
H. The accelaration is $(-1.89, 5.8 \times 10^{-2}, -412.14)ms^{-2}$.

You have done all the above? Excellent! Not much left, please continue.

YOUR MARKS	Full Marks
	12.50

QUESTION 31.7

$$\begin{pmatrix} 5 & 6 & 6 & 6 \\ 6 & 4 & 4 & 4 \\ 5 & 6 & 5 & 5 \end{pmatrix} \times \begin{pmatrix} 2 \\ 2 \\ 2 \\ 2 \end{pmatrix} =?$$

$$\begin{pmatrix} \Theta & \delta \\ \Xi & \varepsilon \\ \delta & \beta \\ \Phi & \Xi \end{pmatrix} \begin{pmatrix} \gamma \\ \beta \end{pmatrix} =?$$

YOUR MARKS	Full Marks
	12.50

QUESTION 31.8

An object is subjected to an external net force $\mathbf{f} = (90.0, 5.0, -3000.0)N$. Its mass is known as $m = 52.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(1.73, 9.6 \times 10^{-2}, 254.30)ms^{-2}$.

B. The accelaration is $(-5.03, 9.6 \times 10^{-2}, 254.30) ms^{-2}$.
C. The accelaration is $(1.73, 9.6 \times 10^{-2}, -57.692) ms^{-2}$.
D. The accelaration is $(1.73, 0.33, 254.30) ms^{-2}$.

YOUR MARKS	Full Marks
	1.56

QUESTION 31.9

Please solve the following equation:

$$3 \times x^2 - 162 \times x + 1599 = 0$$

Here are still some constants for use:

Constant	Symbol	Value
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Boltzmann's constant	k	1.381×10^{-23} J/K

Thank you very much for answering these questions!

Please be advised that in this paper there are questions from 31.1 through 31.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

***** END OF PAPER, THANKS *****

By: 239 (26 , 34)

YOUR NAME (FIRST, ... LAST)	YOUR ID INFORMATION

YOUR TOTAL MARKS	TOTAL FULL MARKS
	100.00

THIS IS AN EXAMPLE OF PERSONALIZED TESTS.

If needed, please use the following constants.

Constant	Symbol	Value
Acceleration due to earth's gravity	g	9.80 m/s^2
Avogadro's number	N_A	6.0221367×10^{23} mol^{-1}
Boltzmann's constant	k	1.380658×10^{-23} J/K
Coulomb's constant	k	8.99×10^{9} N·m^2/C^2
Electron charge magnitiude	e	$1.60217733 \times 10^{-19}$ C
Permeability of free space	μ_0	$1.25663706 \times 10^{-6}$ T·m/A
Permittivity of free space	ϵ_0	$8.854187817 \times 10^{-12}$ C^2/(N·m^2)
Pi	π	3.14159265
Planck's constant	h	$6.6260755 \times 10^{-34}$ J·s
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg
Mass of neutron	m_n	$1.6749286 \times 10^{-27}$ kg
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Speed of light in vacuum	c	299792458. m/s
Universal gravitational constant	G	6.67259×10^{-11} N·m^2/kg^2
Universal gas constant	R	8.314510 J/(mol·K)

Please be advised that in this paper there are questions from 32.1 through 32.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

YOUR MARKS	Full Marks
	62.50

QUESTION 32.1

Please answer ONLY 5 of the following 6 questions (Questions 32.1.1 through 32.1.6).

Here are still some constants for use in the following questions:

Constant	Symbol	Value
Boltzmann's constant	k	1.381×10^{-23} J/K
Avogadro's number	N_A	6.022×10^{23} mol^{-1}
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg

Your marks	Full marks
	12.50

Question 32.1.1

An object is subjected to an external net force $\mathbf{f} = (20.0, 9.0, -4000.0)N$. Its mass is known as $m = 58.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(0.34483ms^{-2}, 0.15517ms^{-2}, -893793.km/h^2)$.
B. The accelaration is $(1.2318ms^{-2}, 0.65111ms^{-2}, -893793.km/h^2)$.
C. The accelaration is $(0.34483ms^{-2}, 0.65111ms^{-2}, 4.0267 \times 10^6 km/h^2)$.
D. The accelaration is $(1.2318ms^{-2}, 0.15517ms^{-2}, 4.0267 \times 10^6 km/h^2)$.
E. none of these.

Your marks	Full marks
	12.50

Question 32.1.2

Let us use Newton's Law of Universal Gravitation to calculate the force of the Sun acting on the eight planets. Let us suppose the mass of the Sun is $7.00 \times 10^{24}kg$. With the mass and the distance to the Sun of each planet in the following table, please fill the blanks for the forces.

The Planet	Mass (kg)	Distanace from Sun (m)	The Force (N)
Mercury	$8.00000000 \times 10^{24}$	$3.000000000 \times 10^{24}$	
Venus	4.00×10^{24}	1.000×10^{25}	
Earth	3.00×10^{24}	5.00×10^{24}	
Mars	3.00×10^{24}	1.000×10^{25}	
Jupiter	1.000×10^{25}	4.00×10^{24}	
Saturn	4.00×10^{24}	8.00×10^{24}	
Uranus	4.00×10^{24}	2.00×10^{24}	
Neptune	3.00×10^{24}	5.00×10^{24}	

Your marks	Full marks
	12.50

Question 32.1.3

In a hotel, the possiblity of non-smoking customer is $a = 0.580$, and the possiblity of equal-or-above 30 years old customer is $b = 0.3200$. Please fill the following form.

Customer	Possibility
smoking and equal-or-above 30 years old	
smoking and under 30 years old	
non-smoking and equal-or-above 30 years old	
non-smoking and under 30 years old	

Your marks	Full marks
	12.50

Question 32.1.4

An object is subjected to an external net force $\mathbf{f} = (80.0, 7.0, -4000.0)N$. Its mass is known as $m = 60.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration (vector) is $(43678., 1512.0, -864000.)km/h^2$.
B. The accelaration (vector) is $(17280., 1512.0, -3.6728 \times 10^6)km/h^2$.
C. The accelaration (vector) is $(83439., 1512.0, -2.5416 \times 10^6)km/h^2$.

D. The accelaration (vector) is $(17280., 1512.0, 2.5907 \times 10^6) km/h^2$.
E. The accelaration (vector) is $(43678., 1512.0, -2.5416 \times 10^6) km/h^2$.
F. The accelaration (vector) is $(17280., 1512.0, -864000.) km/h^2$.
G. The accelaration (vector) is $(59348., 1512.0, -864000.) km/h^2$.
H. The accelaration (vector) is $(59348., 1512.0, 2.5907 \times 10^6) km/h^2$.
I. The accelaration (vector) is $(17280., 1512.0, -2.5416 \times 10^6) km/h^2$.
J. The accelaration (vector) is $(43678., 1512.0, -3.6728 \times 10^6) km/h^2$.
K. The accelaration (vector) is $(83439., 1512.0, 2.5907 \times 10^6) km/h^2$.
L. The accelaration (vector) is $(59348., 1512.0, -3.6728 \times 10^6) km/h^2$.

Your marks	Full marks
	12.50

Question 32.1.5

An object is subjected to an external net force $\mathbf{f} = (70.0, 4.0, -3000.0) N$. Its mass is known as $m = 56.0 kg$. Please calculate its accelaration.

Your marks	Full marks
	12.50

Question 32.1.6

In a hotel, the possiblity of smoking customer is $a = 0.400$, and the possiblity of equal or above 30 years old customer is $b = 0.5400$. Please calculate the possiblity of non-smoking and under 30 years old customer.

You have done all the above? A very good beginning, please go ahead.

More constants the Mass of electron m_e= 9.109390×10^{-31} kg , Universal gas constant R= 8.315 J/(mol·K) , e= $1.60217733 \times 10^{-19}$ C , and m_p= $1.6726231 \times 10^{-27}$ kg may be very helpful.

YOUR MARKS	Full Marks
	1.56

QUESTION 32.2

If any one of the following statements is correct, please fill the box ahead of it with T . If wrong, fill with F.

Your answer	

1. 79 is an even number.

Your answer	

2. Montreal is in Ontario province.

Your answer	

3. $\mathbf{F} = m\mathbf{a}$ is a mathmatical form of the Newton's Second Law.

YOUR MARKS	Full Marks
	1.56

QUESTION 32.3

Please choose the correct one from the following statements:

Your choice

A. Canada has 10 provinces and 3 territories.
B. Canada has 35 provinces and 34 territories.
C. Canada has 33 provinces and 38 territories.
D. Canada has 36 provinces and 35 territories.
E. Canada has 37 provinces and 37 territories.
F. None of above.

YOUR MARKS	Full Marks
	1.56

QUESTION 32.4

An object is subjected to an external net force $\mathbf{f} = (70.000, 4.0000, -3000.0)N$. Its mass is known as $m = 54.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(-3.5419ms^{-2}, 960.00km/h^2, 125.67ms^{-2})$.
B. The accelaration is $(-3.5419ms^{-2}, 4371.4km/h^2, -55.556ms^{-2})$.
C. The accelaration is $(1.2963ms^{-2}, 960.00km/h^2, -55.556ms^{-2})$.
D. The accelaration is $(1.2963ms^{-2}, 4371.4km/h^2, 125.67ms^{-2})$.
E. The accelaration is $(1.2963ms^{-2}, 4371.4km/h^2, -55.556ms^{-2})$.
F. The accelaration is $(-3.5419ms^{-2}, 960.00km/h^2, -55.556ms^{-2})$.
G. None of these.

YOUR MARKS	Full Marks
	3.12

QUESTION 32.5

Considering case-insensitivity, please match the following same strings.

Column Left	Column Right	Your choinces
A. yjh	b	
B. er	YJH	
C. A= 2/ 2	ER	
D. B	a= 1	
E. asdf(:)	ASDF(:)	

YOUR MARKS	Full Marks
	3.12

QUESTION 32.6

An object is subjected to an external net force $\mathbf{f} = (100.0, 6.0, -7000.0)N$. Its mass is known as $m = 60.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(1.67, 0.10, 499.53)ms^{-2}$.
B. The accelaration is $(1.67, 0.10, -116.67)ms^{-2}$.
C. The accelaration is $(1.67, -0.30, 499.53)ms^{-2}$.
D. The accelaration is $(4.24, -0.30, -116.67)ms^{-2}$.
E. The accelaration is $(4.24, 0.10, 499.53)ms^{-2}$.
F. The accelaration is $(4.24, 0.10, -116.67)ms^{-2}$.
G. The accelaration is $(4.24, -0.30, 499.53)ms^{-2}$.
H. The accelaration is $(1.67, -0.30, -116.67)ms^{-2}$.

You have done all the above? Excellent! Not much left, please continue.

YOUR MARKS	Full Marks
	12.50

QUESTION 32.7

$$\begin{pmatrix} 5 & 4 & 6 & 4 \\ 6 & 6 & 6 & 4 \\ 5 & 4 & 4 & 6 \end{pmatrix} \times \begin{pmatrix} 2 \\ 2 \\ 2 \\ 2 \end{pmatrix} =?$$

$$\begin{pmatrix} \alpha & \Delta \\ \sigma & \Gamma \\ \Lambda & \delta \\ \Xi & \varepsilon \end{pmatrix} \begin{pmatrix} \beta \\ \beta \end{pmatrix} =?$$

YOUR MARKS	Full Marks
	12.50

QUESTION 32.8

An object is subjected to an external net force $\mathbf{f} = (40.0, 8.0, -5000.0)N$. Its mass is known as $m = 60.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(0.667, 0.13, -83.333)ms^{-2}$.
B. The accelaration is $(0.667, 0.13, 416.31)ms^{-2}$.
C. The accelaration is $(0.667, 0.31, 416.31)ms^{-2}$.
D. The accelaration is $(3.26, 0.13, -83.333)ms^{-2}$.

YOUR MARKS	Full Marks
	1.56

QUESTION 32.9

Please solve the following equation:

$$9 \times x^2 - 486 \times x + 4797 = 0$$

Here are still some constants for use:

Constant	Symbol	Value
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Boltzmann's constant	k	1.381×10^{-23} J/K

Thank you very much for answering these questions!

Please be advised that in this paper there are questions from 32.1 through 32.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

***** END OF PAPER, THANKS *****

By: 239 (26 , 34)

YOUR NAME (FIRST, ... LAST)	YOUR ID INFORMATION

YOUR TOTAL MARKS	TOTAL FULL MARKS
	100.00

THIS IS AN EXAMPLE OF PERSONALIZED TESTS.

If needed, please use the following constants.

Constant	Symbol	Value
Acceleration due to earth's gravity	g	9.80 m/s^2
Avogadro's number	N_A	6.0221367×10^{23} mol^{-1}
Boltzmann's constant	k	1.380658×10^{-23} J/K
Coulomb's constant	k	8.99×10^{9} N·m^2/C^2
Electron charge magnitiude	e	$1.60217733 \times 10^{-19}$ C
Permeability of free space	μ_0	$1.25663706 \times 10^{-6}$ T·m/A
Permittivity of free space	ϵ_0	$8.854187817 \times 10^{-12}$ C^2/(N·m^2)
Pi	π	3.14159265
Planck's constant	h	$6.6260755 \times 10^{-34}$ J·s
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg
Mass of neutron	m_n	$1.6749286 \times 10^{-27}$ kg
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Speed of light in vacuum	c	299792458. m/s
Universal gravitational constant	G	6.67259×10^{-11} N·m^2/kg^2
Universal gas constant	R	8.314510 J/(mol·K)

Please be advised that in this paper there are questions from 33.1 through 33.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

YOUR MARKS	Full Marks
	62.50

QUESTION 33.1

Please answer ONLY 5 of the following 6 questions (Questions 33.1.1 through 33.1.6).

Here are still some constants for use in the following questions:

Constant	Symbol	Value
Boltzmann's constant	k	1.381×10^{-23} J/K
Avogadro's number	N_A	6.022×10^{23} mol^{-1}
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg

Your marks	Full marks
	12.50

Question 33.1.1

An object is subjected to an external net force $\mathbf{f} = (40.0, 9.0, -5000.0)N$. Its mass is known as $m = 54.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration (vector) is $(9600.0, 2160.0, 3.6777 \times 10^6)km/h^2$.
B. The accelaration (vector) is $(24833., 2160.0, 2.8815 \times 10^6)km/h^2$.
C. The accelaration (vector) is $(38641., 2160.0, 2.8815 \times 10^6)km/h^2$.
D. The accelaration (vector) is $(38641., 2160.0, 4.0996 \times 10^6)km/h^2$.
E. The accelaration (vector) is $(24833., 2160.0, 4.0996 \times 10^6)km/h^2$.
F. The accelaration (vector) is $(34199., 2160.0, 2.8815 \times 10^6)km/h^2$.
G. The accelaration (vector) is $(34199., 2160.0, 4.0996 \times 10^6)km/h^2$.
H. The accelaration (vector) is $(9600.0, 2160.0, 2.8815 \times 10^6)km/h^2$.
I. The accelaration (vector) is $(9600.0, 2160.0, 4.0996 \times 10^6)km/h^2$.
J. The accelaration (vector) is $(9600.0, 2160.0, -1.2000 \times 10^6)km/h^2$.
K. The accelaration (vector) is $(38641., 2160.0, -1.2000 \times 10^6)km/h^2$.
L. The accelaration (vector) is $(34199., 2160.0, -1.2000 \times 10^6)km/h^2$.

Your marks	Full marks
	12.50

Question 33.1.2

Let us use Newton's Law of Universal Gravitation to calculate the force of the Sun acting on the eight planets. Let us suppose the mass of the Sun is $5.00 \times 10^{24} kg$. With the mass and the distance to the Sun of each planet in the following table, please fill the blanks for the forces.

The Planet	Mass (kg)	Distanace from Sun (m)	The Force (N)
Mercury	$7.00000000 \times 10^{24}$	$7.000000000 \times 10^{24}$	
Venus	8.00×10^{24}	8.00×10^{24}	
Earth	5.00×10^{24}	3.00×10^{24}	
Mars	9.00×10^{24}	6.00×10^{24}	
Jupiter	5.00×10^{24}	2.00×10^{24}	
Saturn	9.00×10^{24}	3.00×10^{24}	
Uranus	4.00×10^{24}	4.00×10^{24}	
Neptune	6.00×10^{24}	5.00×10^{24}	

Your marks	Full marks
	12.50

Question 33.1.3

See the following picture.
Which one of the following is missing in it?

Your choice

A. A truck
B. A frisbee
C. Lawn
D. An air-boat
E. A table
F. Not any of aboves.

Your marks	Full marks
	12.50

Question 33.1.4

What is the operation between $a = 7$ and $b = 8$: $a \times b =$? Please also calculate it.

Your marks	Full marks
	12.50

Question 33.1.5

In a hotel, the possiblity of non-smoking customer is $a = 0.580$, and the possiblity of under 30 years old customer is $b = 4.00 \times 10^{-2}$. Please calculate the possiblity of smoking and equal or above 30 years old customer.

Your marks	Full marks
	12.50

Question 33.1.6

In a hotel, the possiblity of smoking customer is $a = 0.890$, and the possiblity of equal-or-above 30 years old customer is $b = 0.6400$. Please fill the following form.

Customer	Possibility
smoking and equal-or-above 30 years old	
smoking and under 30 years old	
non-smoking and equal-or-above 30 years old	
non-smoking and under 30 years old	

You have done all the above? A very good beginning, please go ahead. More constants the Mass of electron m_e= 9.109390 × 10^{-31} kg , Universal gas constant R= 8.315 J/(mol·K) , e= 1.60217733 × 10^{-19} C , and m_p= 1.6726231 × 10^{-27} kg may be very helpful.

YOUR MARKS	Full Marks
	3.12

QUESTION 33.2

Considering case-insensitivity, please match the following same strings.

Column Left	Column Right	Your choinces
A. asdf(:)	c	
B. C	ER	
C. Er	b	
D. B	ASDF(:)	
E. A	a	

YOUR MARKS	Full Marks
	1.56

QUESTION 33.3

Please choose the correct one from the following statements:

Your choice

A. Canada has 36 provinces and 35 territories.
B. Canada has 10 provinces and 3 territories.
C. Canada has 33 provinces and 38 territories.

D. Canada has 37 provinces and 37 territories.
E. Canada has 34 provinces and 39 territories.
F. None of above.

YOUR MARKS	Full Marks
	1.56

QUESTION 33.4

An object is subjected to an external net force $\mathbf{f} = (60.000, 4.0000, -8000.0)N$. Its mass is known as $m = 54.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(2.8796ms^{-2}, 960.00km/h^2, -689.97ms^{-2})$.
B. The accelaration is $(2.8796ms^{-2}, 960.00km/h^2, -148.15ms^{-2})$.
C. The accelaration is $(1.1111ms^{-2}, 960.00km/h^2, -689.97ms^{-2})$.
D. The accelaration is $(1.1111ms^{-2}, -4116.1km/h^2, -148.15ms^{-2})$.
E. The accelaration is $(1.1111ms^{-2}, 960.00km/h^2, -148.15ms^{-2})$.
F. The accelaration is $(2.8796ms^{-2}, -4116.1km/h^2, -148.15ms^{-2})$.
G. None of these.

YOUR MARKS	Full Marks
	3.12

QUESTION 33.5

An object is subjected to an external net force $\mathbf{f} = (50.0, 4.0, -2000.0)N$. Its mass is known as $m = 60.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(0.833, 6.7 \times 10^{-2}, 159.20)ms^{-2}$.
B. The accelaration is $(0.833, 0.28, -33.333)ms^{-2}$.
C. The accelaration is $(0.833, 6.7 \times 10^{-2}, -33.333)ms^{-2}$.
D. The accelaration is $(2.49, 0.28, -33.333)ms^{-2}$.
E. The accelaration is $(2.49, 6.7 \times 10^{-2}, -33.333)ms^{-2}$.
F. The accelaration is $(2.49, 0.28, 159.20)ms^{-2}$.

G. The accelaration is $(2.49, 6.7 \times 10^{-2}, 159.20)ms^{-2}$.
H. The accelaration is $(0.833, 0.28, 159.20)ms^{-2}$.

YOUR MARKS	Full Marks
	1.56

QUESTION 33.6

If any one of the following statements is correct, please fill the box ahead of it with T . If wrong, fill with F.

Your answer		1. 9 is an even number.
Your answer		2. Toronto is in Ontario province.
Your answer		3. $\mathbf{F} = m\mathbf{a}$ is a mathmatical form of the Newton's Second Law.

You have done all the above? Excellent! Not much left, please continue.

YOUR MARKS	Full Marks
	12.50

QUESTION 33.7

An object is subjected to an external net force $\mathbf{f} = (70.0, 9.0, -7000.0)N$. Its mass is known as $m = 58.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(1.21, 0.16, -120.69)ms^{-2}$.
B. The accelaration is $(4.23, 0.58, -285.99)ms^{-2}$.
C. The accelaration is $(1.21, 0.16, -285.99)ms^{-2}$.

D. The accelaration is $(4.23, 0.58, -120.69) ms^{-2}$.

YOUR MARKS	Full Marks
	12.50

QUESTION 33.8

$$\begin{pmatrix} 5 & 6 & 6 & 4 \\ 4 & 5 & 6 & 6 \\ 7 & 5 & 4 & 5 \end{pmatrix} \times \begin{pmatrix} 2 \\ 2 \\ 2 \\ 2 \end{pmatrix} =?$$

$$\begin{pmatrix} \Theta & \Lambda \\ \gamma & \delta \\ \Lambda & \varepsilon \\ \alpha & \Xi \end{pmatrix} \begin{pmatrix} \beta \\ \beta \end{pmatrix} =?$$

YOUR MARKS	Full Marks
	1.56

QUESTION 33.9

Please solve the following equation:

$$-11 \times x^2 + 737 \times x - 12122 = 0$$

Here are still some constants for use:

Constant	Symbol	Value
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Boltzmann's constant	k	1.381×10^{-23} J/K

Thank you very much for answering these questions!

Please be advised that in this paper there are questions from 33.1 through 33.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

***** END OF PAPER, THANKS *****

By: 239 (26 , 34)

YOUR NAME (FIRST, ... LAST)	YOUR ID INFORMATION

YOUR TOTAL MARKS	TOTAL FULL MARKS
	100.00

THIS IS AN EXAMPLE OF PERSONALIZED TESTS.

If needed, please use the following constants.

Constant	Symbol	Value
Acceleration due to earth's gravity	g	9.80 m/s^2
Avogadro's number	N_A	6.0221367×10^{23} mol^{-1}
Boltzmann's constant	k	1.380658×10^{-23} J/K
Coulomb's constant	k	8.99×10^{9} N·m^2/C^2
Electron charge magnitiude	e	$1.60217733 \times 10^{-19}$ C
Permeability of free space	μ_0	$1.25663706 \times 10^{-6}$ T·m/A
Permittivity of free space	ϵ_0	$8.854187817 \times 10^{-12}$ C^2/(N·m^2)
Pi	π	3.14159265
Planck's constant	h	$6.6260755 \times 10^{-34}$ J·s
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg
Mass of neutron	m_n	$1.6749286 \times 10^{-27}$ kg
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Speed of light in vacuum	c	299792458. m/s
Universal gravitational constant	G	6.67259×10^{-11} N·m^2/kg^2
Universal gas constant	R	8.314510 J/(mol·K)

Please be advised that in this paper there are questions from 34.1 through 34.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

YOUR MARKS	Full Marks
	62.50

QUESTION 34.1

Please answer ONLY 5 of the following 6 questions (Questions 34.1.1 through 34.1.6).

Here are still some constants for use in the following questions:

Constant	Symbol	Value
Boltzmann's constant	k	1.381×10^{-23} J/K
Avogadro's number	N_A	6.022×10^{23} mol^{-1}
Mass of electron	m_e	$9.1093897 \times 10^{-31}$ kg

Your marks	Full marks
	12.50

Question 34.1.1

An object is subjected to an external net force $\mathbf{f} = (80.0, 4.0, -2000.0)N$. Its mass is known as $m = 52.0kg$. Please calculate its accelaration.

Your marks	Full marks
	12.50

Question 34.1.2

In a hotel, the possiblity of smoking customer is $a = 0.290$, and the possiblity of equal or above 30 years old customer is $b = 0.3200$. Please calculate the possiblity of non-smoking and under 30 years old customer.

Your marks	Full marks
	12.50

Question 34.1.3

In a hotel, the possiblity of smoking customer is $a = 0.480$, and the possiblity of equal-or-above 30 years old customer is $b = 0.4400$. Please fill the following form.

Customer	Possibility
smoking and equal-or-above 30 years old	
smoking and under 30 years old	
non-smoking and equal-or-above 30 years old	
non-smoking and under 30 years old	

Your marks	Full marks
	12.50

Question 34.1.4

An object is subjected to an external net force $\mathbf{f} = (20.0, 4.0, -8000.0)N$. Its mass is known as $m = 54.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(0.37037ms^{-2}, 0.33040ms^{-2}, 6.8548 \times 10^6 km/h^2)$.
B. The accelaration is $(0.37037ms^{-2}, 7.4074 \times 10^{-2}ms^{-2}, 6.8548 \times 10^6 km/h^2)$.
C. The accelaration is $(0.37037ms^{-2}, 0.33040ms^{-2}, -1.9200 \times 10^6 km/h^2)$.
D. The accelaration is $(0.95015ms^{-2}, 0.33040ms^{-2}, 6.8548 \times 10^6 km/h^2)$.
E. none of these.

Your marks	Full marks
	12.50

Question 34.1.5

An object is subjected to an external net force $\mathbf{f} = (30.0, 9.0, -9000.0)N$. Its mass is known as $m = 52.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration (vector) is $(7476.9, 2243.1, 7.6349 \times 10^6)km/h^2$.
B. The accelaration (vector) is $(22007., 2243.1, 6.8282 \times 10^6)km/h^2$.
C. The accelaration (vector) is $(27105., 2243.1, -2.2431 \times 10^6)km/h^2$.
D. The accelaration (vector) is $(7476.9, 2243.1, -2.2431 \times 10^6)km/h^2$.

E. The accelaration (vector) is $(23622., 2243.1, 6.8282 \times 10^6) km/h^2$.
F. The accelaration (vector) is $(27105., 2243.1, 7.6349 \times 10^6) km/h^2$.
G. The accelaration (vector) is $(22007., 2243.1, 7.6349 \times 10^6) km/h^2$.
H. The accelaration (vector) is $(27105., 2243.1, 8.9406 \times 10^6) km/h^2$.
I. The accelaration (vector) is $(23622., 2243.1, -2.2431 \times 10^6) km/h^2$.
J. The accelaration (vector) is $(22007., 2243.1, -2.2431 \times 10^6) km/h^2$.
K. The accelaration (vector) is $(7476.9, 2243.1, 6.8282 \times 10^6) km/h^2$.
L. The accelaration (vector) is $(23622., 2243.1, 8.9406 \times 10^6) km/h^2$.

Your marks	Full marks
	12.50

Question 34.1.6

What is the operation between $a = 1$ and $b = 4$: $a \times b =$? Please also calculate it.

You have done all the above? A very good beginning, please go ahead.

More constants the Mass of electron m_e= 9.109390×10^{-31} kg , Universal gas constant R= 8.315 J/(mol·K) , e= $1.60217733 \times 10^{-19}$ C , and m_p= $1.6726231 \times 10^{-27}$ kg may be very helpful.

YOUR MARKS	Full Marks
	1.56

QUESTION 34.2

If any one of the following statements is correct, please fill the box ahead of it with T . If wrong, fill with F.

Your answer		1. 74 is an even number.
Your answer		2. Toronto is in Ontario province.
Your answer		3. $\|\mathbf{F}\| = Gm_1m_2r^{-2}$ is a mathmatical form of Newton's Law

of Universal Gravitation.

YOUR MARKS	Full Marks
	1.56

QUESTION 34.3

Please choose the correct one from the following statements:

Your choice

A. Canada has 34 provinces and 39 territories.
B. Canada has 37 provinces and 37 territories.
C. Canada has 36 provinces and 35 territories.
D. Canada has 33 provinces and 38 territories.
E. Canada has 10 provinces and 3 territories.
F. None of above.

YOUR MARKS	Full Marks
	3.12

QUESTION 34.4

An object is subjected to an external net force $\mathbf{f} = (90.0, 8.0, -4000.0)N$. Its mass is known as $m = 58.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(4.69, 0.14, 247.31)ms^{-2}$.
B. The accelaration is $(1.55, 0.43, -68.966)ms^{-2}$.
C. The accelaration is $(4.69, 0.43, 247.31)ms^{-2}$.
D. The accelaration is $(4.69, 0.14, -68.966)ms^{-2}$.
E. The accelaration is $(1.55, 0.43, 247.31)ms^{-2}$.
F. The accelaration is $(1.55, 0.14, 247.31)ms^{-2}$.
G. The accelaration is $(1.55, 0.14, -68.966)ms^{-2}$.
H. The accelaration is $(4.69, 0.43, -68.966)ms^{-2}$.

YOUR MARKS	Full Marks
	3.12

QUESTION 34.5

Considering case-insensitivity, please match the following same strings.

Column Left	Column Right	Your choinces
A. asdf(:)	a	
B. Er	b	
C. A	eR	
D. B	ASDF(:)	
E. A= 4/ 2	a= 2	

YOUR MARKS	Full Marks
	1.56

QUESTION 34.6

An object is subjected to an external net force $\mathbf{f} = (70.000, 3.0000, -9000.0)N$. Its mass is known as $m = 50.0000kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(1.4000ms^{-2}, -3171.4km/h^2, -180.00ms^{-2})$.
B. The accelaration is $(1.4000ms^{-2}, 777.60km/h^2, -180.00ms^{-2})$.
C. The accelaration is $(5.5031ms^{-2}, -3171.4km/h^2, 798.44ms^{-2})$.
D. The accelaration is $(1.4000ms^{-2}, -3171.4km/h^2, 798.44ms^{-2})$.
E. The accelaration is $(5.5031ms^{-2}, 777.60km/h^2, 798.44ms^{-2})$.
F. The accelaration is $(1.4000ms^{-2}, 777.60km/h^2, 798.44ms^{-2})$.
G. None of these.

You have done all the above? Excellent! Not much left, please continue.

YOUR MARKS	Full Marks
	12.50

QUESTION 34.7

$$\begin{pmatrix} 5 & 4 & 4 & 6 \\ 6 & 4 & 6 & 4 \\ 5 & 4 & 5 & 5 \end{pmatrix} \times \begin{pmatrix} 2 \\ 2 \\ 2 \\ 2 \end{pmatrix} =?$$

$$\begin{pmatrix} \Delta & \rho \\ \eta & \rho \\ \Xi & \sigma \\ \varepsilon & \epsilon \end{pmatrix} \begin{pmatrix} \beta \\ \beta \end{pmatrix} =?$$

YOUR MARKS	Full Marks
	12.50

QUESTION 34.8

An object is subjected to an external net force $\mathbf{f} = (80.0, 3.0, -9000.0)N$. Its mass is known as $m = 52.0kg$. Please choose the correct accelaration from the following choices.

Your choice

A. The accelaration is $(6.33, 5.8 \times 10^{-2}, -173.08)ms^{-2}$.
B. The accelaration is $(1.54, 5.8 \times 10^{-2}, 786.99)ms^{-2}$.
C. The accelaration is $(6.33, 0.17, -173.08)ms^{-2}$.
D. The accelaration is $(1.54, 5.8 \times 10^{-2}, -173.08)ms^{-2}$.

YOUR MARKS	Full Marks
	1.56

QUESTION 34.9

Please solve the following equation:

$$-5 \times x^2 + 85 \times x + 300 = 0$$

Here are still some constants for use:

Constant	Symbol	Value
Mass of proton	m_p	$1.6726231 \times 10^{-27}$ kg
Boltzmann's constant	k	1.381×10^{-23} J/K

Thank you very much for answering these questions!

Please be advised that in this paper there are questions from 34.1 through 34.9. And any one of them may contain more than one sub-question, thus the total number of sub-questions here is around 14, of which 13 should be answered.

***** END OF PAPER, THANKS *****

By: 239 (26 , 34)