129 120 120 12923BCP101 120 120 120 120 AT THE END OF FIRST SEMESTER ESSENTIALS AND APPLICATIONS OF MATHEMATICAE, PHYSICAL AND (Common for B.Sc. (Mathematics, Statistics, Chemistry, Electronics, Physics, Data Science, Computer Science, Artificial Intelligence and Robotics, Psychology, Internet of Things, 22 126 Chemistry / Analytical Chemistry, Geology, Geography) Maximum: 70 marks 128 129 129 3. $Tan A \Rightarrow \frac{1}{2} and Tan B \stackrel{120}{=} \frac{1129}{3} \frac{129}{129} \frac{$ 4. Find the unit vector in the direction of a + b, if a = i + 2j + 3k and b = 3i + j(a) $\frac{1}{\sqrt{34}}(4i + 3j + 3k)$ (b) $\frac{129}{34}(3i + 3j + 3k)$ (c) $\frac{1}{27}(4i + 3k)$ (d) $\frac{1}{47}(4i + 3j + 3k)$ 129 129 129 129 5.2 If A and B are (3,4,5) and (6,8,9) find \overline{AB} (a) 3i - 4j - 4k (b) 3i + 4j + 4k (c) 2i + 4j + 4k (d) $5i + 4j + 5k^2$ 6. If mean = 14 and median = 15 then find mode (a) 16 (b) 17 (c) 1213 12 (d) 25 18 20 125 179 125 7. The theory of relativity was introduced by (a) Planck (b) Einstein (c) Maxwell (d) Rutherford 8. Which physics principle is fundamental to remote sensing technologies used in environmental monitoring 12 129 129 129 129 178 128 128 128 12 (b) Snell's Law 178 17 128 170 178 178 179 170 170 (170) (a) Doppler effect (c) Electromagnetic radiation (d) Heisenberg's uncertainty Principle 9. Which branch of physics is specially concerned with the measurement of physical quantities and standard quality control? (a) Optics (b) Metrology (c) Thermodynamics (d) Acoustics (d) Acoustics

100 100 100 100 100 100 100 100 100 100
120 120 120 120 120 120 120 120 120 120
10. What aspect of physics is crucial for understanding the aerodynamics of 22 122 122
(a) Thermodynamics (b) Fluid dynamics (b) Fluid dynamics (c) 129 129 129 129 129 129 129 129 129 129
(a) Thermodynamics (b) Fluid dynamics (c) Electromagnetism (d) Quantum mechanics (20 129 129 129 129 129 129 129 129 129 129
11. What type of physics sensors are commonly used in robotics to defect proximity
Obstacles 7 29 129 129 129 129 129 129 129 129 129
obstacles? 129 129 129 129 129 129 129 129 129 129
(a) Mitrosphile sensors (d) Photoelecteic Sensors (22 129 129 129 129 129 126 129 129 129 129 129 129 129 129 129 129
(29 120 120 120 (C) Officionic Solidors (AP) 127 127 129 129 129 129 129 129 129 129 129 129
12. Which Law predicts a doubling of transistors on a semiconductor chip approximately
every two years? 29 126 129 129 129 129 129 129 129 129 129 129
(a) Ohm's Law (b) Faraday's Law (c) Boyle's Law (d) Moore's Law
13. Which element has the electronic configuration 1s ² 2s ² 2p ⁶ 3s ¹ ?
12. Which Law predicts a doubling of transistors on a semiconductor chip approximately every two years? (a) Ohm's Law: (b) Faraday's Law 13. Which element has the electronic configuration. 1s ² 2s ² 2p ⁶ 3s ¹ ? (a) Carbon (b) Oxygen (c) Sodium: 29 129 129 129 129 129 129 129 129 129
(a) Carbon (b) Oxygen (e) Sodium (d) Silicon 14. Which of the following is an example of a chemical change? (a) Culting paper (b) Mixing salt and sand
14. Which of the following is an example of a chemical change? (a) Cutting paper (b) Mixing salt and saind (c) Rusting of iron (d) Melting ice 123 129
(a) Cutting paper (b) Mixing salt and sand (c) Rusting of iron (d) Melting ice (20 129 129 129 129 129 129 129 129 129 129
Which biomolecule is the primary source of energy for living organisms?
(c) Rusting of iron (d) Melting ice 123 129 15. Which biomolecule is the primary source of energy for living organisms? () (a) Proteins (b) Nucleic acids (c) Carbohydrates (d) Efpids
(a) Proteins (b) Nucleic acids (c) Carbohydrates (d) Efpids 16. What is the common name for table sugar? (a) Glucose (b) Lactose (c) Sucrose 17. Which of the following is a complete protein source, containing all essential amino acids? (a) Rice (b) Quinoa (c) Pasta (d) Bread 18. Which vitamin is known as the sunshine vitamin? (b) vitamin C (e) vitamin D (d) vitamin K
10. W that is the common thank to the second of the second
(a) Gittose (2) (b) Eactose (c) 129 129 129 129 129 129 129 129 129 129
17. Which of the following is a complete process.
acids (a 128 128 128 128 128 128 128 128 128 128
(a) Rice (29(b) Quinoa (c) Pasta (12(u) Dread
(a) Rice (b) Quinoa (c) Pasta (d) Bread 18. Which vitamin is known as the sunshine vitamin? (a) vitamin A (b) vitamin C (c) vitamin D (d) vitamin K
(a) Rice (b) Quinoa (c) Pasta (d) Bread 18. Which vitamin is known as the sunshine vitamin? (a) vitamin A (b) vitamin C (c) vitamin D (d) vitamin K 19. WWW Stands for?
19. WWW Stands for?
(a) World wide web (b) World web wide (c) Organization (d) 24 costs
129 20.9 What is the internet's first name?
(a) Rice (b) Quinoa (c) Tasta (d) Dread 18. Which vitamin is known as the sunshine vitamin? (a) vitamin A (b) vitamin C (c) vitamin D (d) vitamin K 19. WWW Stands for? (a) World wide web (b) World web wide (c) Organization (d) Website 20. What is the internet's first name? (a) ARPANET (b) INTERNET (c) NET (d) Internet (b) INTERNET (c) NET (d) Internet
(a) World wide web. (b) World web wide (c) Organization (d) Website 20. What is the internet's first name? (a) ARPANET (b) INTERNET (c) NET (d) Internet 21. Which of the following is a component of LAN? (a) NIC (b) Cable (c) Bridge (d) All of the above
(a) NIC (b) Gable (c)Bridge (d) All of the above
10 10 10 10 10 10 10 10 10 10 10 10 10 1
21. Which of the following is a component of LAN? (a) NIC (b) Gable (c)Bridge (d) All of the above

100 490 121 19n and 231 120 120 120 120 120 120
120 120 120 120 120 120 120 120 120 120
129 129 129 129 129 129 129 129 129 129
129 129 129 120 120 120 120 120 120 120 120 120 120
. 120 129 120 120 120 120 120 120 120 120 120 120
0 129 129
120 129 22. Each computer on a network is called 120 129 129 129 129 129 129 129 129 129 129
29 128 129 (a) Bus (b) Node 12 (c) Tertifinator (d) LAN 128 129 129 129 129 129 129 129 129 129 129
129 129 129 23. Full form of internet?26 120 126 129 129 129 129 129 129 129 129 129 129
179 129 120 129 120 129 120 129 120 120 120 120 120 120 120 120 120 120
(c) Interconnected herwork (d) International network
22. Each computer on a network is called (a) Bus (b) Node 12(c) Terminator (d) LAN 18 129 129 129 129 129 129 129 129 129 129
129 129 129 129 129 129 129 129 129 129
1 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
25. Which of the following (28 126 126 127 129 129 129 129 129 129 129 129 129 129
129 129 129 129 129 129 129 129 129 129
25. Which of the following is a scarch engine. 129 129 129 129 129 129 129 129 129 129
129 129 129 129 129 (a) E-commerce (b) Chatting 129(c) I ransaction (d) Surging 129 129 129 129 129 129 129 129 129 129
Which of the following is a primary source of probiotics in the food and beverage
129 129 129 129 129 129 129 129 129 129
(a) Yogurt (a) Yogurt (b) Chatting (c) I ransaction (d) Suntage (d) Potato chips (a) Yogurt (a) Joule (b) Chocolate (c) Bread (d) Potato chips (a) Joule (a) Joule (b) Calorie (c) Watt (d) Electron volt (a) Joule (a) Newton's first Law (b) Newton's second Law (c) Newton's third Law (d) Kepler's first Law (d) Kepler's first Law (e) Newton's first Law (f) Law (g) Newton's first Law (h) Law (
(126) 128 129 129 129 129 129 129 129 129 129 129
129 128 129 129 129 12 (a) Joule 29 12 (b) Calorie (c) Watt (d) Electron Volt
(a) Journal (b) Journal (c) 128 128 offddenly the passengers of mished back. This is an example of? 129 (129)
29. When a bus starts studenty, the passengers of pendicular to 129 129 129 129 129 129 129 129 129 129
(d) Kepler's first Law
129 1293029 Sin 135? 126 126 129 120 126 129 120 126 127 126 128 126 128 126 128 126 126 126 126 126 126 126 126 126 126
(a) Newton's first Law (b) Newton's second Law (c) Newton's third Law (d) Kepler's first Law (e) Newton's third Law (f) Newton's first Law (g) 129 129 129 129 129 129 (h) $\frac{1}{\sqrt{2}}$ (c) $\frac{\sqrt{3}}{2}$ (d) $\frac{\sqrt{-3}}{2}$ (e) $\frac{1}{\sqrt{2}}$ (f) $\frac{1}{\sqrt{2}}$ (g) $\frac{1}{\sqrt{2}}$ (g) $\frac{1}{\sqrt{2}}$ (g) $\frac{\sqrt{3}}{2}$ (h) $\frac{1}{\sqrt{2}}$ (g) $\frac{1}{\sqrt{2}}$ (h) $\frac{1}{\sqrt{2}}$ (g) $\frac{1}{\sqrt{2}}$ (h) $\frac{1}{\sqrt{2}}$ (g) $\frac{1}{\sqrt{2}}$ (h) $\frac{1}{\sqrt{2}}$ (h) $\frac{1}{\sqrt{2}}$ (h) $\frac{1}{\sqrt{2}}$ (l) $\frac{\sqrt{3}}{2}$ (l) $\frac{\sqrt{-3}}{2}$ (l) $\frac{1}{\sqrt{2}}$ (l) \frac
$(a) \sqrt{2}$ $\sqrt{2}$ 2
128 128 128 128 128 129 128 129 129 129 129 129 129 129 129 129 129
31. $i^5 + i^{10} + i^{15} =$ 32. The mode of the data 0, 0, 1, 1, 2, 2, 2, 2, 3, 3, 4, 5 is 33. Rate of change of momentum of a particle is
$31. i^{5} + i^{10} + i^{15} = $
32. The mode of the data 0, 0, 1, 1, 2, 2, 2, 2, 3, 3, 4, 5 is
33 Rate of change of momentum of a particle is
1128-0410 forms of
36. Molecular weight of arithonia is
37 is known as a main memory
129 129 12

3 130 456 456 45. Ca 485 476 430 486 480 480 43.	100 100 120 120 120 120 120 120 120 120
38. The brain of any computer systems is	120 (20 129 129 129 129 129 129 129 129 129 129
39. A light year is a unit of 130 129	179 129 129 129 126 129 120 129 129 129 129 129 129 120
20 120 120 40. is known as the water of	120 129 129 129 129 129 129 120 120 120 120 129 129 129
120 120 120	126 158 151 152 152 15
129 129 129 129 129 129 129 129 129 129	C (Very short answer answer
41 Evarana /1) 214 200 120 120 120	
120 129 129 120 120 120 120 120 120 120 120 120 120	20 (29 129 129 129 129 129 120 120 120 129 129 129 129 120 120 to
$\frac{129}{128} \frac{129}{128} 12$	then find 2a x by 28 126 126 126 126 129 129 129 129 129 126 126 126 126 126 126 126 126 126 126
43 Find the median of 5,8,3,6,2,8,1,3,9.	124 129 129 129 129 129 120 120 120 129 129 129 129 129 120 120
3 128 128 129 129 129 129 129 129 129 129 129 129	129 129 129 129 129 129 129 129 129 129
What is aerospace industry?	129 129 126 129 129 126 129 126 129 126 129 129 129 126 129 126
what are nucleons?	
what are fat-soluble vitamine?	1/9 1/29 1/29 1/29 1/29 1/29 1/29 1/2
TO. WHALLS Trop have a	129 129 129 129 129 12
122 128 1249! What is the function of modern?	- 129 129 129 129 129 129 129 129 129 129
50. Write any four types of Networks?	129 129 129 129 129 129 121 123 123 124 125 126 129 121 125 126 129 125 126 126 126 126 126 126 126 126 126 126
그는 사람들은 사람들은 사람들이 가득하고 하는 것이 되었다. 그 사람들은 사람들은 사람들은 사람들은 사람들은 사람들은 사람들은 사람들은	- 124 129 129 125 126 129 125 12 12 126 126 126 126 126 126 127
120 120 120 120 120 120 120 120 120 120	
25 175 - 25 175 - 25 125 125	170 196 129 129 12°
51. Cos 210 co 120 120 120 120 120 120 120 120 120 120	129 129 129 129 129 129
16 (29 126 13 136 125 128 125 126 126 126 126 126 126 126 126 126 126	
25 125 125 125 52. 126 Tan 17π120 129 129 129 129	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
25 125 126 53. Radio waves are used in	() c. Airport security 120 120 120 120 120 120 120 120 120 120
54. X – rays are used in	() d. A.M. and F.M. Radio
129 28 125 129 129 126 126 129 00 126 126 126 126 126 126 126 126 126 126	() (0.77)
	이 그러워요요. 아이들은 얼마 마가 이 아이들은 아이들은 아이들은 아이들은 아이들은 아이들은 아이들은 아이
16 00 12 12 120 120 120 120 120 120 120 12	
125 126 125 126 129 (Apple	(a) 1943 ²⁸ 128 128 128 128 128 128 128 128 128 128
57. 129 120 57. 120 ENIAC	(a) as 1943 ²⁵ 128 129 129 129 126 12 129 129 129 129 129 129 129 129 129
57.12° ENIAC	() bit 1954
58. 195 IBM 650	(*) 5° c. 1976
Grape sugar	(a)) d. Lactose (b) 129 129 129 129 129 129 129 129 129 129
	6 129 129
oo. Pluit sugai	() e. Glucose
ov. Pruit sugai	() C. Gildose 126 126 126 126 126 126 126 126 126 126
ov. Pruit sugai	() C. Gildose 126 126 126 126 126 126 126 126 126 126
oo. Pluit sugai	() C. Gildesse 126 126 126 126 126 126 126 126 126 126

3 150 456 456 45 C0 155 170 354 456 150 150 15.

, 120 120 125 126 125 129 129 120 120 120 129 129 129 129 8 120 129 129 120 129 121 124 179 120 129 129 129 129 129 129 120 129 125 (29 120 129 63. The branch of physics that deals with light related phenomena is 69. Bluetooth allows your device to connect with another device

.. 120 179 120 120

150 179 129 179 175 175

129 120 129 126 129

(29 1.2) (20 (29 (20 120 120 120 120

70. Mercury is a noble metal22

125

120 129 129