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2022/TDC/ODD/SEM/BTCHCC-303T/303

TDC (CBCS) Odd Semester Exam., 2022 2. Auswer 1437 one of the following devotions:

BIOTECHNOLOGY DELC (D)

(Honours)

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Course No.: BTCHCC-303T

H-TIML! (Chemistry—I)

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Time: 3 hours doold a

CAMPS WINDOWS The figures in the margin indicate full marks for the questions Slootpag stijnester svitugsapromin in dand

UNIT-I

1. Answer any two of the following questions: well begannin medica witosite si ledW to2×2=4

- (a) What is Bohr's theory? partition to periodic reliable
- (b) What is Hund's rule of maximum multiplicity?
- electronic configurations of (c) Deduce de Broglie equation.

J23/225

(Turn Over)



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_	Loomer and O	ne of the following questions:	6

- (a) Discuss, the Matomic spectrum of hydrogen atom.
- (b) Discuss Schrödinger's wave equation. What is the significance of ψ and ψ^2 ?

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UNIT—II

3. Answer any two of the following questions:

2×2=4

- (a) Give one example each of s-block and p-block elements.
- (b) What is screening effect?
- (c) What is electronegativity? What is the most electronegative element in periodic table? 1+1=2
- 4. Answer any one of the following questions: 6
- (a) What is effective nuclear charge? How does it vary across the groups and periods in periodic table?
 - (b) What do you mean by s, p, d, f block elements? What are the general electronic configurations of s- and p-block elements?

 4+2=6

J23/225 (Continued)

(3)

Unit—III

5. Answer any two of the following questions:

(a) What is surface tension? What is its unit?

- (b) Why is glycerol more viscus than water?
- (c) What is vapour pressure of a liquid?
- 6. Answer any one of the following questions: 6
 - (a) What is coefficient of viscosity? How is it determined? 2+4=6
 - (b) Discuss the effect of addition of solutes on the surface tension of a liquid.

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7. Answer any two of the following questions:

 $2 \times 2 = 4$

- (a) What are detergents?
- (b) How does the viscosity of water change with increase in temperature?
- (c) Discuss the structure of water.

J23/225 (Turn Over)

8.	Answer any one of the following questions:	6
	(a) What is viscosity of a liquid? What is its	. 65

unit? What happens to the viscosity of water when a detergent is mixed to it? What is surface teorgon? What is its

2+1+3=6

(b) Explain why the viscosity of liquid and gases varies with temperature.

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9. Answer any two of the following questions: : Englished Labrathi of to the yes to ted 2x2=4

- (a) What is an electrolyte? Can water be $1\frac{1}{2}+\frac{1}{2}=2$ considered as an electrolyte?
- (b) What is common-ion effect?
- (c) What is the full form of pH? What is the range of pH at 25 °C? 1+1=2
- 10. Answer any one of the following questions:
 - (a) What is an acid-base indicator? Explain the working of phenolphthalein as acid-base indicator (with structure). 2+4=6
 - How can the strength of an acid be determined by pH-metric acid-base titration with a base of known strength?

Discuss the skatalite of water.

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