



**MAHARASHTRA STATE
BOARD OF TECHNICAL EDUCATION**

(Autonomous) (ISO/ IEC 27001:2005)
Govt Polytechnic Building, 4th Floor, 49, Kherwadi,
Bandra [E], Mumbai – 400 051.

Tel : 0226471255(O)/32508706(P)
Email :secretary @ msbte.com

Fax : 022-26473980
web:www.msbte.com

Outward No./MSBTE/D-42/W-17/ONLINE/I-SCHEME/ 2054

Date : 7 SEP 2017

CIRCULAR

To
The Principal,
All Affiliated Polytechnics.

I-Scheme is being implemented from the current academic year 2017-18 for the first year. First class test for the subject : Basic Science (Physics & Chemistry), Q. P. Code 22102) to be conducted at institute level. Sample pattern of MCQs is displayed on website of MSBTE. The institute shall conduct the class tests on similar lines.

Second class test for Q. P. 22102 will be conducted online, for which, link will be made available during the class test II schedule.

All the concerned principals are instructed to keep infrastructure ready for the smooth conduction of second class test and term end examination.


(Dr.Vinod.M.Mohitkar)

Secretary

Maharashtra State Board of Technical Education,
Mumbai-400051

For Term End Online Examination, there will be 25 (15 x 1Mark questions + 10 x 2Marks questions = 35 Marks) questions each on Physics and Chemistry.

Suggestive Sample Questions

Physics Q.P. Code 22102 (Topic No. 1 to 3)

Topic No: 1:

Q. Select the correct option of Fundamental Quantities with SI Units. 1 Mark

Quantity	units
a) Length	i) A
b) Temperature	ii) m
c) Electric current	iii) mol
d) Amount of substance	iv) K

Options:

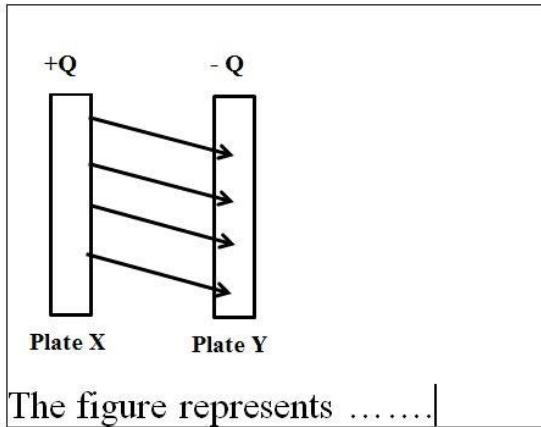
- A) a-ii, b-iv, c-i, d-iii B) a-iii, b-i, c-iv, d-ii,
C) a-ii, b-i, c-iv, d-iii D) a-iv, b-iii, c-ii, d-i

Q. Dimension of power is _____ 2 Marks

Options:

- A) $L^1 M^1 T^{-2}$ B) $L^2 M^{-1} T^3$
C) $L^2 M^1 T^{-3}$ D) $L^2 M^{-1} T^3$

Q. The figure represents



- A) Electric lines of force in uniform electric field
- B) Electric lines of force in non - uniform electric field
- C) Electric lines of force in uniform magnetic field
- D) Electric lines of force in non - uniform magnetic field

Q: One ampere Current is given by _____

1 Mark

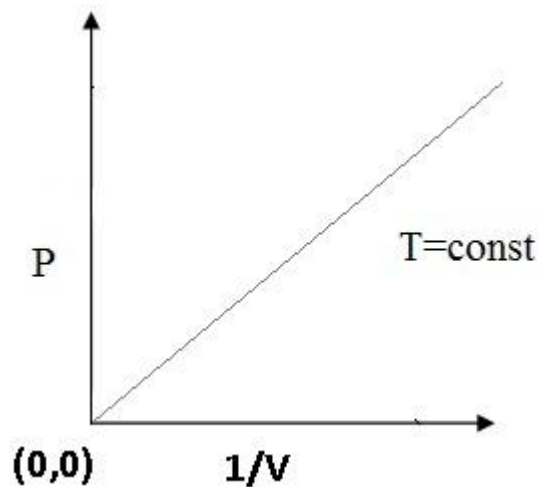
- A) $1A = 1C/1ohm$
- B) $1A = 1C/1s$
- C) $1A = 1s * 1C$
- D) $1A = 1s/1C$

Topic: 3

Q: Given Below is the graphical representation of _____

1 Mark

Figure:-



Options:

- A) Joules Law
- B) Charles Law
- C) Boyles Law
- D) Gay Lussacs Law

Q: The measure of hotness or coldness of a body is known as_____. 1 Mark

Options

- A) heat energy
- B) temperature
- C) chemical energy
- D) potential energy

Q: A dimensionless quantity

1 Mark

Options

- A) Never has a unit
- B) Always has a unit
- C) May have a unit
- D) Does not exist

Q: A wire of resistance R is stretched which increases its length by 1%. Its new resistance is =

2 Marks

Options

- A) $(1.01)^2R$
- B) $1.01R$
- C) $R/1.01$
- D) $R/(1.01)^2$

Q: Temperature scales degree Celsius ($^{\circ}C$) & degree Fahrenheit ($^{\circ}F$) are related as

2 Marks

Options

- A) $^{\circ}C = 9/5(^{\circ}F-32)$
- B) $^{\circ}F = 5/9 (^{\circ}C+32)$
- C) $C^{\circ}/9 = (^{\circ}F-32/) / 5$
- D) $^{\circ}C=5/9(^{\circ}F-32)$

Q: When an impurity is doped into an intrinsic semiconductor the conductivity of the semiconductor

2 Marks

Options

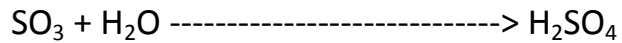
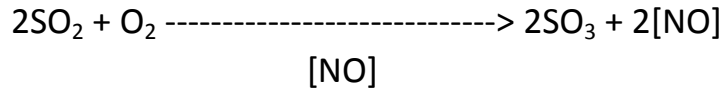
- A) Increases
- B) Decreases
- C) Remains the same
- D) Becomes Zero

Chemistry Q.P. Code 22102 (Topic No. 4 to 6)

Topic: 4

Q: Name the process involved in the following reaction for preparation of H_2SO_4

1 Mark



Options

- A) Chamber process
- B) Contact process
- C) Deacon's process
- D) Haber's process

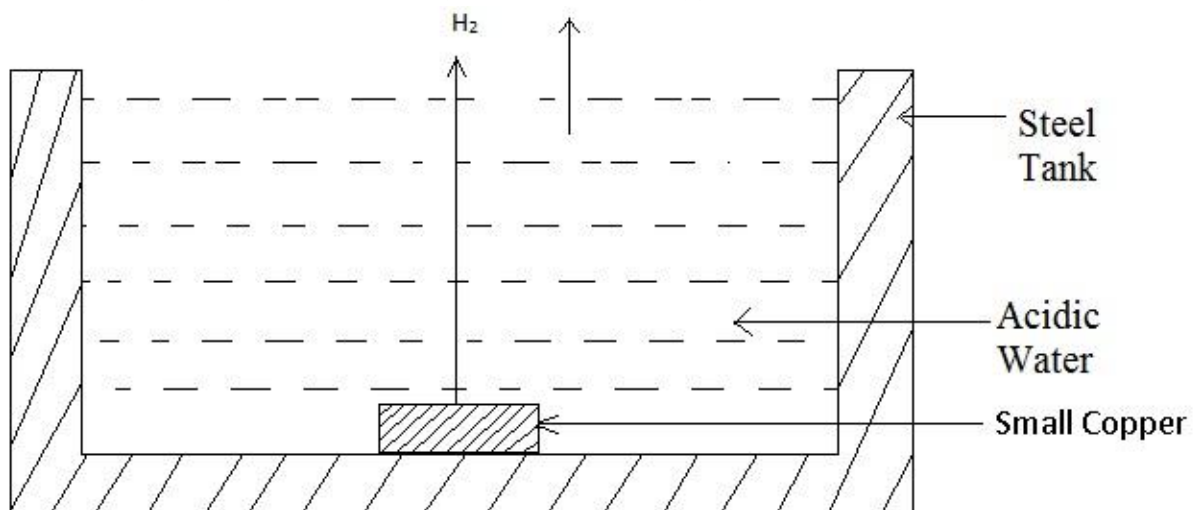
Q: Identify the compound formed by mutual sharing of electrons 1 Mark

Options

- A) electrovalent
- B) ionic
- C) covalent
- D) Co-ordinate

Topic:5

Q: The diagram given below represent which type of corrosion? 1 Mark



Options

- A) Dry Corrosion
- B) Crevice corrosion
- C) Pitting Corrosion
- D) Wet corrosion

Q: Unit for electro-chemical equivalent is

1 Mark

Options:

- A) g/coulomb
- B) g/ampere
- C) g/sec
- D) g/faraday

Topic: 6

Q: An example of plasticizers used in paints is

1 Mark

Options:

- A) methylated spirit
- B) asbestos
- C) naphthenates
- D) triphenyl phosphate

Q: Select the correct statement from the following.

1 Mark

Options:

- A) plastics obtained by addition polymerization reaction are joined by strong covalent bond
- B) plastics obtained by addition polymerization reaction are insoluble in organic solvents
- C) plastics obtained by addition polymerization are joined by weak covalent bond
- D) plastics obtained by condensation polymerization are soluble in organic solvents

Q: The weakest bond among the following is

1 Mark

Options

- A) Ionic Bond
- B) Metallic Bond
- C) Covalent bond
- D) Hydrogen bond

Q: Which of the metal could provide cathodic protection

2 Marks

Options

- A) Al and Zn
- B) Zn and Ni
- C) Zn and Cu
- D) Cu and Ni

Q: When a cell of Lead acid storage battery is being charged it acts as

2 Marks

Options

- A) Galvanic cell
- B) An Electrolytic cell
- C) A Daniel cell
- D) A dry cell

Q: On the basis of mode of their formation the polymers can be classified 1 Mark

Options

- A) As Addition polymer only
- B) As condensation polymer only
- C) As copolymers
- D) Both as addition and condensation polymers