Q-1 Which organization developed the long-range glide bomb 'Gaurav'?

A **DRDO (Defence Research and Development Organisation)**
B ISRO (Indian Space Research Organisation)
C HAL (Hindustan Aeronautics Limited)
D BDL (Bharat Dynamics Limited)

Correct Answer : A

Q-2 Which of the following pairs is correctly matched?

A **Fluoride : Skeletal Fluorosis**
B Arsenic : Blue Baby Syndrome
C Mercury : Itai - Itai
D Nitrate : Black-Foot Disease

Correct Answer : A

Q-3 Madhav National Park is located in _____

A Rajasthan
B Chhattisgarh
C **Madhya Pradesh**
D Assam

Correct Answer : C

Q-4 In the following question, an idiomatic expression and four options to its meaning are given. Find out the correct meaning of the idiomatic expression and mark the correct option accordingly.Man of straw

A An unreasonable person
B A very active person
C A child of a celebrity or a famous person
D **A person who is disregarded as lacking character or morality**

Correct Answer : D

Q-5 Choose the appropriate word to complete the given sentence Mohan's _____ spirit helped overcome numerous professional and personal challenges.

A Vacillating
B Weak
C **Indomitable**
D Frail

Correct Answer : C

Q-6 In a garden, a farmer wants to plant two types of trees. He has 315 mango trees and 495 apple trees. He wants to plant them in the minimum number of rows in such a way that each row has only one type of plant and also contains an equal number of trees in each row. Find the number of rows in doing this process.

A **18**
B 21
C 23
D 22

Correct Answer : A

Q-7 Which chemical compound is commonly used in airbags to produce gas for inflation during a collision?

A Ammonium Nitrate
B **Sodium Azide**
C Silver Iodide
D Potassium chloride

Correct Answer : B

Q-8 73rd Constitutional Amendment Act is related to _____ .

A Include Konkani, Manipuri and Nepali as official languages.

B Privy Purse was abolished

C To extend the reservation of seats for SCs and STs in the Lok Sabha and states assemblies for another 10 years

D Statutory provisions for Panchyati Raj as third level of administration in villages.

Correct Answer : D

Q-9 The GST council is headed by the _____ .

A Prime Minister

B Minister of Commerce and Industry

C Union Finance Minister

D Home Minister

Correct Answer : C

Q-10 Who was the court poet of Samudragupta?

A Harisena

B Bhavabhuti

C Ravikirti

D Kalidasa

Correct Answer : A

Q-11 The union territory that remained under Portuguese possession until 1954 is ____ .

A Puducherry

B Andaman and Nicobar Islands

C Dadra and Nagar Haveli

D Lakshadweep

Correct Answer : C

Q-12 Choose the correct passive form of the sentence given below:
Had the police arrested the burglar.

A Had the burglar been arrested by the police.

B Have the burglar been arrested by the police.

C The burglar has been arrested by the police.

D Had the burglar was arrested by the police.

Correct Answer : A

Q-13 Select the correctly spelt word

A Financialy

B Financially

C Unboneted

D Diffrence

Correct Answer : B

Q-14 How many letters of the English alphabet in upper case appear same when looked at in a mirror?

A 5

B 7

C 9

D 11

Correct Answer : D

Q-15 Which will be the next term in the sequence given below?
7, 8, 11, 16, ___

A 25

B 23

C 21

D 26

Correct Answer : B

Q-16 Two charges are placed at a distance apart. If a glass plate is placed between them, then the force between them will

A Remain the same

B Decrease

C Increase

D zero

Correct Answer : B

Q-17 The law which governs the force between the electric charges is called

A Ohm's Law

B Faraday's law

C Coulomb's law

D Ampere's law

Correct Answer : C

Q-18 The resistance of the wire is 'r' ohm. The wire is stretched to double its length. Now the resistance of the wire in Ohm is

A r/2

B 4 r

C r/4

D 2 r

Correct Answer : B

Q-19 Three 2 Ohm resistors are connected to form a triangle. The resistance between any two corner is

A 2 ohm

B (3/4) ohm

C (4/3) ohm

D 6 ohm

Correct Answer : C

Q-20 A 50 volt battery is connected across 10 ohm resistor. The current is 4.5 ampere. The internal resistance of the battery is

A 1.1 ohm

B 5.0 ohm

C Zero

D 0.5 ohm

Correct Answer : A

Q-21 According to Joule's law of heating, if potential difference across a conductor having a material of specific resistance ρ, remains constant, then the heat produced in the conductor is directly proportional to

A ρ^3

B ρ

C ρ^2

D 1/ρ

Correct Answer : D

Q-22 The magnetic field at a point due to a current carrying conductor is directly proportional to

A Distance from the conductor

B Resistance of the conductor

C Current flowing through the conductor

D Thickness of the conductor

Correct Answer : C

Q-23 The strength of the magnetic field around a straight conductor

A is same everywhere around the conductor

B obeys inverse square law

C is directly proportional to the square of the distance from the conductor

D None of the above

Correct Answer : A

Q-24 In Young's double slit experiment, the distance between two sources is 0.1 mm. The distance of the screen from the source is 20 cms. The wavelength of light used is 5460 A°. Then the angular position of the first fringe is

A 0.32°

B 0.20°

C 0.16°

D 0.08°

Correct Answer : C

Q-25 A beam of light strikes a piece of glass at an angle of incidence 60° and the reflected beam is completely plane polarized. The refractive index of glass is

A 3/2

B √(3/2)

C 2√3

D √3

Correct Answer : D

Q-26 Two sources of light are said to be coherent if waves produced by them have the same

A Wavelength

B Amplitude

C Frequency and constant phase difference

D Amplitude and same wavelength

Correct Answer : C

Q-27 The distinction between conductor, insulator and semiconductor are largely concerned with

A Binding energy of their electrons

B Their ability to conduct current

C Relative widths of their energy gaps

D The type of crystal lattice

Correct Answer : C

Q-28 The semiconductor material having high negative coefficient of resistivity is a

A Transistor

B Thermistor

C Insulator

D Conductor

Correct Answer : B

Q-29 The depletion layer in the P-N junction region is caused by

A Diffusion of charge carriers

B Drift of holes

C Drift of electrons

D Migration of impurity ions

Correct Answer : A

Q-30 The current gain α of a transistor is 0.95. The change in collector current corresponding to a change of 0.4 mA in the base current in a common emitter arrangement would be

A 6.6 mA

B 9.6 mA

C 7.6 mA

D 16.6 mA

Correct Answer : C

Q-31 The electronic configuration of a di-positive metal M^{2+} is 2, 8, 14 and its atomic weight is 56 a.m.u. The number of neutrons in its nuclei would be

A **30**
B 32
C 34
D 42

Correct Answer : A

Q-32 In which of the following compounds, the ionic radius of 'Cr' is minimum

A **K_2CrO_4**
B CrF_3
C CrO_2
D $CrCl_3$

Correct Answer : A

Q-33 At 25°C, the dissociation constants of CH_3COOH and NH_4OH in aqueous solution are almost the same. The pH of a solution of 0.01 N CH_3COOH is 4.0 at 25°C. The pH of 0.01 N NH_4OH solution at the same temperature will be

A 3.0
B 4.0
C **10.0**
D 11.0

Correct Answer : C

Q-34 The reaction of formaldehyde with Grignard reagent gives

A **primary alcohols**
B secondary alcohols
C tertiary alcohols
D none of these

Correct Answer : A

Q-35 Reaction of alcohols with dimethyl sulphate gives

A alkenes
B carboxylic acids
C **ethers**
D esters

Correct Answer : C

Q-36 The group reagent for the test of alcohols is

A **ceric ammonium nitrate**
B Schiff's reagent
C Molisch's reagent
D Br2 water

Correct Answer : A

Q-37 The iodoform cannot be synthesized from which of the following

A ethyl alcohol
B **methyl alcohol**
C acetone
D acetaldehyde

Correct Answer : B

Q-38 Which of the following reagents can convert CH_3COOH into C_2H_5OH?

A Sn/HCl
B H2/Pt
C **LiAlH4/ether**
D Na/EtOH

Correct Answer : C

Q-39 The normality of 0.3 M phosphorous acid (H_3PO_3) is

A 0.1
B 0.9
C 0.3
D **0.6**

Correct Answer : D

Q-40 Which of the following ion has smallest ionic radius

A K^{+}

B Ca^{2+}

C Ti^{3+}

D Ti^{4+}

Correct Answer : D

Q-41 Which of the following statement about ionic compounds is incorrect

A They consist of ions

B have high melting points

C good conductors at room temperature

D have high boiling points

Correct Answer : C

Q-42 Le-chatelier's principle is applicable only to

A Homogeneous reactions

B Heterogeneous reactions

C Systems in equilibrium

D All reversible reactions

Correct Answer : C

Q-43 Which of the following is not a Lewis acid

A $BaCl_2$

B $AlCl_3$

C BCl_3

D $SnCl_4$

Correct Answer : A

Q-44 Acetylene may be prepared by the electrolysis of

A Potassium formate

B Potassium acetate

C Potassium succinate

D Potassium fumarate

Correct Answer : D

Q-45 The order of the reaction can be deduced from

A experiment

B chemical equation

C rate constant

D Thermo- chemical equations

Correct Answer : A

Q-46 The value of the principal argument of z, where z=-1 is

A 0

B п/2

C п

D п/4

Correct Answer : C

Q-47 The sum of arithmetic progression 3,6,9,... upto 50 terms is

A 3825

B 3725

C 3285

D 3582

Correct Answer : A

Q-48 The second term in expansion of $(2x-3y)^6$ is

A $576x^4 y^2$

B $-567x^4 y^2$

C $567x^5 y$

D **$-576x^5 y$**

Correct Answer : D

Q-49 What is the value of cos(7π/6)?

A √3/2

B **(-√3)/2**

C 1/√2

D (-1)/√2

Correct Answer : B

Q-50 If $\sin 2\theta = 2\sin\theta$ is true, then value of θ is

A **0°**

B 30°

C 45°

D 60°

Correct Answer : A

Q-51 The domain of the function f(x)=(1/(x²-1)) is

A (-∞,∞)

B (-∞,∞)-{-1}

C (-∞,∞)-{1}

D **(-∞,∞)-{-1,1}**

Correct Answer : D

Q-52 For what value of λ, the function $f(x)=\begin{cases}6x^2+x+\lambda, & x\neq 1\\ 0, & x=1\end{cases}$ is continuous at $x=1$?

A 7

B **-7**

C 6

D -5

Correct Answer : B

Q-53 The derivative of the function f(x)=log(sinx) is

A **cotx**

B -sinx

C tanx

D 1/sinx

Correct Answer : A

Q-54 What is the value of the integral $\int \sin(2x+3)\,dx$?

A $-2\cos(2x+3)+C$

B $-\frac{1}{2}\tan(2x+3)+C$

C $-\frac{1}{2}\cos(2x+3)+C$

D $-\frac{1}{2}\cot(2x+3)+C$

Correct Answer : C

Q-55 The equation of the line passing through the point (1,5) and making an intercept -3 on the y-axis is

A 8x-y+3=0

B 8x+y-3=0

C -8x-y+3=0

D **-8x+y+3=0**

Correct Answer : D

Q-56 What is the length of AB, where the coordinate of points A and B are (1,0) and (3,2)?

A **2√2**

B √2

C 2

D -2√2

Correct Answer : A

Q-57 The equation of the ellipse whose vertices are at (±5,0) and foci at (±4,0) is

A $\frac{x^2}{9}+\frac{y^2}{25}=1$

B $\frac{x^2}{16}+\frac{y^2}{25}=1$

C $\frac{x^2}{25}+\frac{y^2}{9}=1$

D $\frac{x^2}{25}+\frac{y^2}{16}=1$

Correct Answer : C

Q-58 The median of the given set of numbers 1,3,3,8,2,2,7,10 is

A 1

B 2

C **3**

D 4

Correct Answer : C

Q-59 If A and B are two independent events of a random experiment with probabilities $P(B)=\frac{1}{2}$ and $P(A\cup B)=\frac{2}{3}$. Then $P(A)$ is

A 2/3

B 1/6

C 1/2

D **1/3**

Correct Answer : D

Q-60 The probability that a leap year selected at random will contain 53 Sundays is

A 1/7

B **2/7**

C 3/7

D 4/7

Correct Answer : B