WHIZ SEARCH (SAMPLE PAPER)

CLASS – 12th [MEDICAL]

Important Instructions:

- This paper contains 35 questions among 4 Sections (Physics, Chemistry, Mathematics and Mental ability & Reasoning).
- All questions are compulsory.
- Sections (Physics, Chemistry and Mathematics) contains 9 questions each.
- Section (Mental ability & Reasoning) contains 8 questions only.
- Total Time duration of test paper is 60 Minutes only.
- Each question is allotted **4 marks for correct response**.
- **1 mark will be deducted** for marking incorrect or multiple responses.
- No deduction will be made from total marks for unattempted questions.
- For each question, there is **only 1 correct** response.

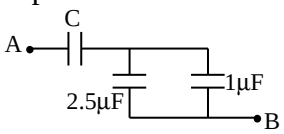
PHYSICS

SECTION (Maximum Marks: 36)

(1.) A soap bubble is given a negative charge. Then its radius
(a.) decreases
(b.) increases
(c.) remains unchanged
(d.) will change but the information is insufficient to predict whether it will increase or decrease.

ANS: B

(2.) The equivalent capacitance between A and B in the figure is 1μF. Then the value of the capacitance C is



(a.) 1.4 μF
(b.) 2.5 μF
(c.) 3.5 μF
(d.) 1.2 μF

ANS: A

(3.) The specific resistance of a wire
(a.) varies with its length
(b.) varies with its cross-section
(c.) varies with its mass
(d.) does not depend on its length, cross-section and mass

ANS: D

(4.) A horizontal wire of length 10 cm and mass 0.3 g carries a current of 5A. The minimum magnitude of the magnetic field which can support the weight of the wire is ($g = 10\ m/s^2$)
(a.) 3×10^{-3} T
(b.) 6×10^{-3} T
(c.) 3×10^{-4} T
(d.) 6×10^{-4} T

ANS: D

(5.) The area enclosed by a hysteresis loop is a measure of
(a.) retentivity
(b.) susceptibility
(c.) permeability
(d.) energy loss per cycle

ANS: D

(6.) A coil having 500 square loops, each of side 10 cm, is placed normal to a magnetic field which is increasing at the rate of 1.0 tesla per second. The induced emf is
(a.) 0.1 V
(b.) 0.5 V
(c.) 1 V
(d.) 5 V

ANS: D

(7.) A step –down transformer transforms a supply line voltage of 2200 volt into 220 volt. The primary coil has 5000 turns. The efficiency and power transmitted by the transformer are 90% and 8 kilowatt respectively. Then the number of turns in the secondary is
(a.) 5000
(b.) 50
(c.) 500
(d.) 5

ANS: C

(8.) A concave mirror of focal length f (in air) is immersed in water ($\mu = 4/3$). The focal length of mirror in water will be
(a.) f
(b.) $\frac{4}{3}$f
(c.) $\frac{3}{4}$f
(d.) $\frac{7}{3}$f

ANS: C

(9.) For most distinct interference patterns to be observed the necessary condition is that the ratio of intensities of light waves from the two coherent sources should be:
(a.) 1 : 1
(b.) 1 : 2
(c.) 1 : 3
(d.) 1 : 4

ANS: A

CHEMISTRY

SECTION (Maximum Marks: 36)

(10.) A certain solute upon dissolution in some solvent undergoes 45% trimerization and 40% dimerization. What is the value of $\frac{1}{i}$ for this situation:

(a.) 1
(b.) 2
(c.) 0.5
(d.) 4

ANS: B

(11.) Zn Amalgam is prepared by electrolysis of aqueous $ZnCl_2$ using Hg cathode (9gm.) How much current is to be passed through $ZnCl_2$ solution for 1000 seconds to prepare a Zn Amalgam with 25% Zn by wt. (Zn = 65.4)
(a.) 5.6 amp
(b.) 7.2 amp
(c.) 8.85 amp
(d.) 11.2 amp

ANS: C

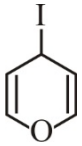
(12.) Which of the following parent oxy acid does not have its Hypo acid.
(a.) H_2SO_4
(b.) HNO_2
(c.) H_3PO_3
(d.) $HClO_3$

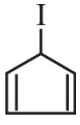
ANS: D

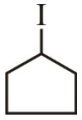
(13.) The EAN of metal atoms in $[Fe(CO)_2(NO^+)_2]$ and $CO_2(CO)_8$ respectively are :
(a.) 34, 35
(b.) 34, 36
(c.) 36, 36
(d.) 36, 35

ANS: C

(14.) Compare rate of SN_1 reaction?

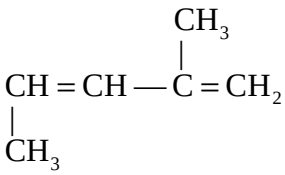
(a) 

(b) 

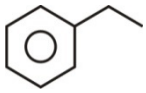
(c) 

(a.) a > b > c
(b.) a > c > b
(c.) c > b > a
(d.) b > a > c

ANS: B

(15.) $CH_3COCH_3 \xrightarrow{CH_3C\equiv \overset{\ominus}{C}\overset{\oplus}{Na}} X \xrightarrow{H_2O} Y \xrightarrow{H_2,Pd+CaCO_3} Z \xrightarrow{Al_2O_3} W$, W is :
(a.) $CH_2 = CH — CH = CH_2$
(b.) $CH_3 – CH = CH — CH = CH_2$
(c.) 
(d.) $CH_3–CH=CH–CH=CH–CH_3$

ANS: C

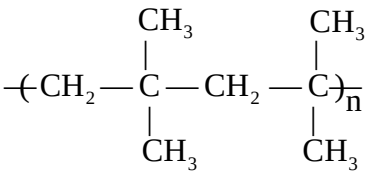
(16.)  $\xrightarrow{NBS}$ (A) $\xrightarrow[KOH]{alc.}$ (B) $\xrightarrow[peroxide]{HBr}$ (C) $\xrightarrow{aq.KOH}$ (D) $\xrightarrow{PCC}$ (E) $\xrightarrow[\Delta]{aq.KOH}$ (F)

Number of Geometrical isomer of compound F is.
(a.) 2
(b.) 4
(c.) 8
(d.) 12

ANS: A

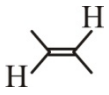
(17.) The number of dipeptides that can be made from alanine and glycine are
(a.) 6
(b.) 2
(c.) 3
(d.) 4

ANS: D

(18.)  is a polymer having monomer units _____.

(a.) 

(b.) 

(c.) 

(d.) 

ANS: A

BIOLOGY

SECTION (Maximum Marks: 36)

(19.) Filiform apparatus is characteristic feature of
(a.) Aleurone cell
(b.) Synergids
(c.) Generative cell
(d.) Nucellar embryo

ANS: B

(20.) Which of the following cells during gametogenesis is normally diploid?
(a.) Spermatogonia
(b.) Secondary polar body
(c.) Primary polar body
(d.) Spermatid

ANS: A

(21.) In his classic experiments on pea plants, Mendel did not use
(a.) Seed shape
(b.) Flower position
(c.) Seed colour
(d.) Pod length

ANS: D

(22.) Initiation codon in eukaryotes is
(a.) GAU
(b.) AGU
(c.) AUG
(d.) UAG

ANS: C

(23.) Peripatus is a connecting link between
(a.) Mollusca and Echinodermata
(b.) Annelida and arthropoda
(c.) Coelenterata an porifera
(d.) Ctenophora and platyhelminthes

ANS: B

(24.) HIV that causes AIDS, first starts destroying
(a.) Helper T-lymphocytes
(b.) Thrombocytes
(c.) B-lymphocytes
(d.) Leucocytes

ANS: A

(25.) The guts of cow and buffalo possess
(a.) Methanogens
(b.) Cyanobacteria
(c.) Fucus sp.
(d.) Chlorella sp.

ANS: A

(26.) The cutting of DNA at specific locations become possible with the discovery of
(a.) Selectable markers
(b.) Ligases
(c.) Restriction enzymes
(d.) Probes

ANS: C

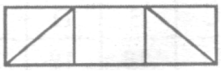
(27.) Golden rise is a genetically modified crop plant where the incorporated gene is meant for biosynthesis of
(a.) Omega 3
(b.) Vitamin A
(c.) Vitamin B
(d.) Vitamin C

ANS: B
EXP:

MENTAL ABILITY & REASONING

SECTION (Maximum Marks: 32)

(28.) How many quadrilaterals are there in the following figure?



(a.) 11
(b.) 8
(c.) 2
(d.) 4

ANS: A

(29.) Find the wrong term 9, 11, 15, 23, 39, 70, 135
(a.) 23
(b.) 39
(c.) 70
(d.) 135

ANS: C

(30.) A watch reads 4 : 30. If the minute - hand points to East, in which direction does the hour-hand point ?
(a.) North-East
(b.) South-East
(c.) North-West
(d.) North

ANS: A

(31.) The time in the clock is 4 : 46, what is the mirror image ?
(a.) 7 : 24
(b.) 7 : 14
(c.) 7 : 14
(d.) 7 : 24

ANS: B

(32.) Neelam, who is Rohit's daughter, says to Indu, "Your mother Reeta is the younger sister of my father, who is the third child of Sohanji. " How is Sohanji related to Indu ?
(a.) Maternal-uncle
(b.) Grandfather
(c.) Father
(d.) Father-in-law

ANS: B

(33.) If the seventh day of month is three days earlier than Friday, what day will it be one the nineteenth day of the month ?
(a.) Sunday
(b.) Monday
(c.) Wednesday
(d.) Friday

ANS: A

(34.) Sum of the Proper divisors of 100.
(a.) 217
(b.) 216
(c.) 116
(d.) 117

ANS: B

(35.) Sanjay went 70 metres in the East before turning to his right. He went 10 metres before turning to his right again and went 10 metres from this point. From here he went 90 metres to the North. How far was he from the starting point?
(a.) 80 metres
(b.) 100 metres
(c.) 140 metres
(d.) 260 metres

ANS: B