SECTION – A (M.C.Q'S)   Marks: 37

Q.No.1 Choose the correct answer for each from the given options: Each MCQ carry 01 mark.

1.   C language is a _____ level language.
     (a) Low   (b) machine   (c) High   (d) none of these
2.   C language has been developed by _____.
     (a) Dennis Ritchie   (b) Bill Gates   (c) Windows   (d) Intel corporation
3.   All C language programs consist of one or more _____.
     (a) Arrays   (b) String   (c) For loop   (d) function
4.   All C language statement must end with a _____.
     (a) Colon   (b) semi colon   (c) right brace   (d) full stop
5.   _____ can be read by humans but are ignored by the compiler and linker in C.
     (a) Arrays   (b) Pointers   (c) Comments   (d) print f()
6.   Which of the following is an arithmetic operator in C language.
     (a) &   (b) &&   (c) <   (d) +
7.   Unary operator require ____ operand.
     (a) 1   (b) 2   (c) 3   (d) 4
8.   A _____ is used to translate a C program into machine language code (object code).
     (a) Interpreter   (b) Compiler   (c) Excel   (d) while loop
9.   A Relational operator is used to
     (a) Combine values   (b) initialize a constant
     (c) Compare values   (d) multiply values
10. data type float occupies _____ bytes in memory.
     (a) Three   (b) Two   (c) One   (d)   Four
11. The precedence of logical operators is _____ than the Relational operators.
     (a) High   (b) Low   (c) Same   (d) Very High
12. The format specified % c is used to print _____.
     (a) String   (b) long integer   (c) character   (d) float
13. The precedence rule determine which operation_____.
     (a) Is used first   (b) is most important
     (c) is fastest   (d) is slowest
14. In the statement Answer= !3%5 ; the variable Answer assigned the value_____
     (a) 6   (b) 3   (c) 4   (d) 2
15. The function get the input a _____ without waiting for Enter key press.
     (a) string   (b) character   (c) integer   (d) name
16. The do-while loop is uses _____
     (a) pre testing   (b) post testing   (c) immediate testing   (d) None of these
17. A one-dimensional array is some time called a _____
     (a) tables   (b) matrices   (c) contiguous list   (d) Unix
18. A function that call itself is a _____ function
     (a) good   (b) bad   (c) recursive   (d) Right
19. A_____ variable is known only within the function in which it is defined.
     (a) Global   (b) wrong   (c) local   (d) both a and c
20. In IDE of Turbo C _____ keys used to compile source file of c program to object file
     (a) Alt+F9   (b) Alt+F3   (c) Ctrl+F3   (d) F6
21. A string is _____
     (a) A list of numbers   (b) An array of character
     (c) an exaltation of character   (d) Integer
22   A _____ statement is used in switch for immediate exit from the structure.
     (a) For   (b) string   (c) clrscr()   (d) break

23. A _____ is a pictorial representation of logic use in computer program.
(a) Debugging   (b) Flow chart   (c) variable   (d) main()

24. A source file of Turbo C program has _____ extension.
(a) .OBJ   (b) .c   (c) .exe   (d) .java

25. An if condition written within the body of another is statement .This is called_____
(a) Looping   (b) nesting   (c) break   (d) continue

26. A _____ is used to separate the three parts of the loop expression in a for loop.
(a) Coma   (b) semi colon   (c) continue   (d) left brace

27. While loop & do while loop are used for _____ repetition.
(a) Fix number of time   (b) indefinite
(c) last   (d) None of these

28. _____ are identifiers whose values do not change during program execution.
(a) Constant   (b) Variable   (c) words   (d) macro

29. The statement   int num; is an example of _____
(a) String declaration   (b) array declaration
(c) loop declaration   (d) variable definition

30 _____ is a escape sequence used for new line
(a) \t   (b) \n   (c) \r   (d) \f

31. _____ is known as increment operator.
(a) +   (b) --   (c) ++   (d) /

32. The _____ perform certain action when the condition is true , otherwise the action is skipped.
(a) If statement   (b) variable   (c) operator   (d) string

33. An identifier cannot contain _____
(a) Letter   (b) Digit   (c) underscore   (d) blank space

34. _____ is not a data type in Turbo C.
(a) Integer   (b) float   (c) String   (d) character

35. The braces{ ,} also known as
(a) Loops   (b) Delimiters   (c) functions   (d) Escape sequence

36. The subdirectory INCLUDE contain _____ file.
(a) Exe file   (b) header files   (c) Trash files   (d) Source files

37. The IDE stand mean in turbo C
(a) Integrated Development system   (b) Intel Development System
(c) Inter development System   (d) None

The End

BOARD OF INTERMEDIATE & SECONDARY EDUCATION, HYDERABAD

Excellence – equity – empathy

Time: 2 Hours   **Computer Science Model Paper (Class XII)**   **Total marks: 75**

SECTION –B (Short Answers)   Marks: 24

Note: Attempt any SIX of the following questions. Each question carries 04 marks.

Q. 2.	Define main () function in C language.
Q. 3.	Explain use of format specifier in C language.
Q. 4.	Define if statement in C language and write syntax /General Format for if Statement.
Q. 5.	What is the difference between a variable and a constant .
Q. 6.	What is Array? Define general structure of one dimensional array.
Q. 7.	What is Syntax Error .
Q. 8	What is function in C language . Name the type of Functions in C language.
Q. 9	Write a computer program in 'C' language that print No's from 1 to 20 by using "for loop".
Q. 10.	What is an operator? Describe Relational operators.
Q. 11.	Write a program in 'C' that displays the message "WELCOME TO B.I.S.E HYDERABAD" on the screen.

SECTION-C (Descriptive Answer)   Marks: 14

Note: Answer any TWO of the following questions. Each questions carry 07 marks.

Q. 12.	Name and describe the data types in 'C' language.
Q. 13.	Write a Computer program in 'C' language that convert age in days from years use Scan f( ) function.
Q. 14.	Write notes any TWO of the following
	(a) Escape Sequence
	(b) Nested Loop
	(c) The Switch Statement

The End

BOARD OF INTERMEDIATE & SECONDARY EDUCATION, HYDERABAD
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CHEMISTRY-II MODEL PAPER

Time: 02:00 hrs   Class: XII   Marks: 85

Time: 40 Minutes   **SECTION-A**   Marks: 43
MULTIPLE CHOICE QUESTION (MCQ'S)

Q1. Attempt all MCQ's each MCQ carries equal marks.

1. In modern periodic table the d-block elements are in:
   (a) A-group   (b) Left side   (c) B-group   (d) Bottom

2. Which is the longest period of periodic table:
   (a) 4th period   (b) 5th period   (c) 6th period   (d) 7th period

3. Which elements are known as outer transition elements:
   (a) S and P block elements   (b) Only d-block elements
   (c) Only f-block elements   (d) N.O.T

4. Third period of modern periodic table contains:
   (a) 18 elements   (b) 2 elements   (c) 32 elements   (d) 8 elements

5. The elements of VIII A group are called:
   (a) Noble bases   (b) Inert gases   (c) Zero group elements   (d) A.O.T

6. Which group elements from polymeric hydrides:-
   (a) I A   (b) II A   (c) III A   (d) VII A

7. The product of the reaction $NaALH_4 + 4H_2O \longrightarrow$? is:
   (a) $NaOH + 3AlOH$ (b) $NaOH + Al(OH)_3$ (c) $Na ALO_2 + H_2$ (d) None of these

8. In hydrides the hydrogen atom possesses:
   (a) Positive charge   (b) Negative charge   (c) No any charge   (d) N.O.T

9. The amount of heat released when one mole of ions of alkali metlals is dissolved in water is called:
   (a) Heat of hydration   (b) Heat of formation   (c) Heat of solution   (d) All of these

10. $Na_2 CO_3$ (washing soda) is prepared by:
    (a) Castner Kellner's process   (b) Down's process
    (c) Ammonia Solvary process   (d) N.O.T

11. The formula of baking soda is:
    (a) $NaHCO_3$ (b) Na_2CO_3 (c) $NaOH$ (d) A.O.T

12. Which is known as Kieserite:
    (a) $MgSO_4$ (b) $MgSO_4.H_2O$ (c) $NaOH$ (d) $NaNO_3$

13. The total P-block elements are:
    (a) 32   (b) 30   (c) 18   (d) 18

14. Which element of P-block element is in liquid form:
    (a) Chlorine   (b) Bromine   (c) Mercury   (d) A.O.T

15. Chlorine is prepared by:
    (a) Nelson's cell   (b) Castner Kellner's cell
    (c) Down's cell   (d) A.O.T

16. Nitric acid is prepared by:
    (a) Ostwald's method   (b) Contact process
    (c) Bayer's method   (d) Down's process

17. The first series of transition elements starts from:
    (a) Yttrium   (b) Lanthanum   (c) Scandium   (d) Nobelium

18. Copper sulphate pent hydrate is also called:
    (a) Green vitriol   (b) Black vitriol   (c) blue vitriol   (d) All of these

19. A harmful reaction of a metal in which it undergoes slow decay is called:
    (a) Corrosion   (b) Tin plating   (c) Electro-plating   (d) A.O.T

20. The corrosion is caused by the formation of:
    (a) Nitrides   (b) Sulphide   (c) Oxides   (d) Chlorides

21. The transition metal which possesses unpaired electrons is called:
    (a) Diamagnetic   (b) paramagnetic   (c) Both a & b   (d) N.O.T

22. The $CuSO_4.5H_2O$ dissolved in excess of ammonia shows color:
(a) Dark green   (b) Dark red   (c) Dark blue   (d) N.O.T

23. 1000 kg of coal tar yields the benzene about:
(a) 2-3kg   (b) 1-3kg   (c) 1-2kg   (d) 3-4kg

24. In Latin the word petroleum means:
(a) Rock oil   (b) Cracked oil   (c) N.O.T   (d) A.O.T

25. The monomers used in Bakelite polymer are:
(a) Toluene and formaldehyde   (b) Benzene and formaldehyde
(c) Phenol and formaldehyde   (d) Acetone and formaldehyde

26. Furan and Thiophene are examples of:
(a) Heterocyclic compounds   (b) Homo-cyclic compounds
(c) Monocyclic compounds   (d) Tri-cyclic compounds

27. Pentane (C_4H_{12}) shows the isomers:
(a) n-pentane   (b) iso-pentane   (c) neo-pentane   (d) A.O.T

28. The I.U.P.A.C name of :
$$H_3C - \overset{\overset{\textstyle O}{\|}}{C} - CH_3$$ is:-
(a) Dimethyl ketone   (b) Acetone
(c) 2-propanone   (d) A.O.T

29. The structure of Acetylene is:
(a) Tetrahedral   (b) Trigonal   (c) Linear   (d) Pyramidal

30. The bond angle is ethane is:
(a) 90.5^0 (b) 120^0 (c) 180^0 (d) 360^0

31. The double bonds is benzene are:
(a) Localized   (b) Delocalized   (c) Unstable   (d) N.O.T

32. The reaction in which single bonds are converted into double or triple bonds is called:
(a) Addition reaction   (b) Substitution reaction
(c) Elimination reaction   (d) Rearrangement reaction

33. De-hydro halogenation is a reaction of:
(a) Addition of H_2O (b) Elimination of HX   (c) Addition of HX (d) Elimination of H_2O

34. Ethylene glycol is formed by the oxidation of:
(a) Ethane   (b) Ethyne   (c) Ethylene   (d) Propylene

35. When phenol is treated with red hot zinc dust it yields:
(a) Toluene   (b) Benzene   (c) Picric acid   (d) Xylene

36. The rate of SN^1 reaction depends on the concentration of:
(a) Substrate   (b) Nucleophile   (c) Both a & b   (d) A.O.T

37. Which one is Oxonium ion:

(a) $R - \overset{+}{\underset{\underset{\textstyle H}{|}}{O}} - R$ (b) $H_3\overset{+}{C}$ (c) $\overset{-}{O}H$ (d) N.O.T

38. The carbohydrates which can not be further hydrolyzed are called:
(a) Monosaccharide   (b) Di-saccharides
(c) Polysaccharides   (d) A.O.T

39. A class of protein which catalyze all types of biochemical reactions is called:
(a) Vitamins   (b) Lipids   (c) Globulin protein (d) Enzymes

40. The mixture of sodium and calcium silicates is used to manufacture:
(a) Ordinary glass   (b) Pyrex glass   (c) Colored glass   (d) A.O.T

41. The position of hydrogen atom in modern periodic table is in:
(a) IA Group   (b) IV A Group   (c) VII A Group   (d) N.O.T

42. Alkali metals are the elements of group:
(a) IIIA   (b) IIA   (c) IA   (d) VIII A

43. A compound having a bond angle 180^0 is:
(a) Alkane   (b) Alkene   (c) Alkyne   (d) Cycloalkane

The End
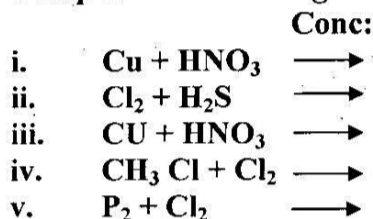
SECTION-B   Marks: 24
Section-B (Short Questions)

Note: Attempt any SIX questions each question carries 04 marks.

Q2. What are the main features of periodic classification of elements?

Q3. Discuss briefly the position of hydrogen in periodic table?

Q4. Write a brief note on isomerism?
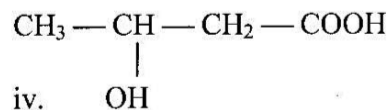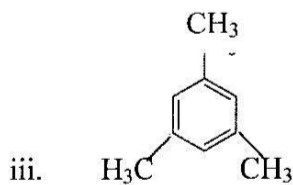
Q5. Complete the following reactions.

$$\text{Conc:}$$

i. $Cu + HNO_3 \longrightarrow$

ii. $Cl_2 + H_2S \longrightarrow$

iii. $CU + HNO_3 \longrightarrow$

iv. $CH_3\,Cl + Cl_2 \longrightarrow$

v. $P_2 + Cl_2 \longrightarrow$

Q6. Write short note on *"Corrosion"*.

Q7. Discuss the structure of Ethyne?

Q8. Write the reaction mechanism of SN^1 reaction.

Q9. What do you mean by monohydric, di-hydric and Tri-hydric alcohols? Give two examples of each class.

Q10. Explain addition reaction with example.

SECTION-C   Marks: 18
(Long Questions)

Note: Attempt any TWO questions each question carries equal marks.

Q11. What do you know about glass? Describe in detail.

Q12. What are carbohydrates? Discuss the classification based on taste.

Q13(a) Name the following compounds according to I.U.P.A.C system

i. $H - CHO$ ii. $CH_3 - CO - CO - C_2\,H_5$

iii.   iv. $CH_3 - CH - CH_2 - COOH$
                                                                  |
                                                                 OH

v. CCl_4

Q13(b). Draw the structure of following compounds.

i.   Naphthalene   ii.   Phenyl Hydrazine

iii. Picric acid   iv.   Vinyl chloride

v.   Iso-butyl bomide

The End

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Time: 2 Hrs   **PHYSICS MODEL PAPER (XII)**   Total Marks: 85

SECTION-A   Marks /43

MULTIPLE CHOICE QUESTIONS (MCQ's)

Q.No. 1   Choose the correct answer for each from the given options:-

1. The energy that flows from a high temperature object to a low temperature object is called.
   (a) Heat   (b) Sound Electricity   (c) Solar Energy   (d) N.O.T

2. The SI unit of heat is _____ .
   (a) Calorie   (b) Joule   (c) Electron Volt   (d) N.O.T

3. "At constant pressure the volume of a gas is proportional to the absolute temperature". It is called _____ .
   (a) General Gas Law (b) Boyle's Law   (c) Charle's Law   (d) Avogadro's law

4. When one or more than one electrons are removed from an atom it becomes
   (a) Neutral particle   (b) Negatively charged particle
   (c) Positively charged particle   (d) N.O.T

5. Those material objects which do not allow the charge or electric current to pass through them are called _____ .
   (a) Insulator   (b) Conductors   (c) Semi-conductors   (d) N.O.T

6. Like charges _____
   (a) Attract each other   (b) Repel Each other
   (c) Neither attract nor repel each other   (d) N.O.T

7. The net charge flowing across the sectional area per unit time is known as _____ .
   (a) Electric Current   (b) Ampere   (c) Electric flow   (d) N.O.T

8. The S I unit of current is _____ .
   (a) Ampere   (b) Coulomb   (c) Volt   (d) N.O.T

9. Batteries or cells convert _____ .
   (a) Heat energy into electrical energy   (b) Nuclear energy into electrical energy
   (c) Kinetic energy into electrical energy   (d) Chemical energy into electrical energy

10. Unlike poles of two magnets _____ .
    (a) Attract   (b) Repel   (c) Neither attract nor repel   (d) N.O.T

11. _____ was the first to note the presence of magnetic force in a wire in which current are flowing.
    (a) Newton   (b) Ampere   (c) Oersted   (d) N.O.T

12. The SI unit of magnetic induction B is _____ .
    (a) Volt   (b) Watt   (c) Farad   (d) Tesla

13. If p-type material of the pn-junction is connection with negative terminal of the battery and n-type material with positive terminal of the battery, it is said to be _____ .
    (a) Forward biased   (b) reversed biased   (c) Zero biased   (d) N.O.T

14. A device, which converts an alternating current to a direct current, is called _____
    (a) Oscillator   (b) rectifier   (c) amplifier   (d) P type material

15. A thin layer of one type of semiconductor material sandwiched between two relatively thick pieces of other type is termed as _____ .
    (a) Diode   (b) rectifier   (c) transistor   (d) Oscillator

16. Velocity of light is _____
    (a) 3×10^8 m/s   (b) 3×10^6 m/s   (c) 3×10^8 cm/s   (d) N.O.T

17. The electrons, which can wander in the solid, are known as _____ .
    (a) Valence electron   (b) Free electron   (c) loosely bound electrons   (d) N.O.T

18. When an electron jumps from higher to lower orbit, then _____ .
    (a) Energy is absorbed   (b) Energy is emitted
    (c) Neither absorbed nor emitted   (d) N.O.T

19. When electron in hydrogen atom jumps from higher orbit into first orbit. The set of lines emitted is called _____ .
    (a) Balmer Series   (b) Lyman Series   (c) Bracket Series   (d) Paschen Series

20. According to Bohr's Theory of the hydrogen atom, the total energy of the hydrogen atom with its electron revolving in the stationary orbit is _____ .

(a) Proportional to n (b) Proportional to n^2
(c) Inversely proportional to n (d) inversely proportional to n^2

21. X-rays are _____.
(a) Positively charged particles (b) Negatively charged particles
(c) Neutral particles (d) N.O.T

22. The device that produces an intense, monochromatic and coherent beam of light based on stimulated emission of photons from atoms, is called _____.
(a) Laser (b) X-ray tube (c) Discharge tube (d) Cyclotron

23. Nuclei of the same element having the same Z but different values of N are called
(a) Isotopes (b) Isobars (c) Isomers (d) Allotropes

24. The emission of rays from the nucleus is called _____.
(a) Annihilation of matter (b) Disintegration of atoms
(c) Radioactivity (d) Fission

25. _____ rays or particles are not deflected by electric and magnetic field.
(a) α-particle (b) β-particle (c) Υ-particles (d) All of these

26. Neutron was discovered by _____.
(a) Crooks (b) J.J. Thomson (c) Chadwick (d) N.O.T

27. Linear and volume expansion is related as _____.
(a) B = α (b) B = 2α (c) B = 3α (d) B = 4α

28. The process carried out under constant temperature.
(a) Isobaric (b) Isochoric (c) Isothermal (d) Adiabatic

29. After completion of cannot cycle _____ is constant.
(a) Work (b) Heat (c) Internal energy (d) A.O.T

30. If the distance between charges is doubled them e.s force will became _____.
(a) 2F (b) ¼ F (c) 4 F (d) ½ F

31. If we want of increase the capacitance of a parallel plate capacitor then _____.
(a) We should increased the size of plate (b) We can used dielectric
(c) We keep plates closer (d) All of them

32. Rate of flow of charges is called _____
(a) Electric C Current (b) Conductance
(c) Resistance (d) Potential difference

33. There are _____ electron in 1 C charges.
(a) 6.25×10^{16} (b) 6.25×10^{17} (c) $6.25 \times 10_{18}$ (d) 6.25×10^{19}

34. Which law is similar to Gauss's Law.
(a) Faradys's law (b) Ampere's law (c) Coulomb's law (d) Ohm's law

35. Unit of self inductance is on the name of scientist.
(a) Maxwell (b) Gauss (c) Henry (d) Ampere

36. Shunt resistance has _____ value
(a) Small (b) Large (c) infinite (d) N.O.T

37. The major function of transistor is _____.
(a) Modulation (b) Oscillation (c) rectification (d) Amplification

38. According to Einstein time for an event in a morning frame a references _____.
(a) Increases (b) Decreases (c) Remain constant (d) Becomes Zero

39. The minimum energy of photon able to generate electron positron pair _____.
(a) 0.8 MeV (b) 1 MeV (c) 1.02 MeV (d) 1.2 MeV

40. Alpha particle is similar to _____ nucleus.
(a) Hydrogen (b) Helium (c) Lithium (d) Sodium

41. the energy released during fission of uranium – 235 atoms
(a) 100 MeV (b) 150 MeV (c) 200 MeV (d) 1000 MeV

42. Which substance is preferred as a coolant in LMFBR (Liquid lithium fast breeder reactor)
(a) Water (b) Liquid lithium (c) Liquid Sodium (d) Liquid Boom

43. The apparatus used to identify the radiation by the track of ionized particle
(a) Geiger-Mullar counter (b) Semi Conductor diode
(c) Scintillation chamber (d) Wilson Cloud chamber

(THE END)

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Time: 2 Hrs **PHYSICS MODEL PAPER (XII)** **Total Marks: 85**

SECTION –B Marks /24
Short Quest

Note:- Attempt any SIX of the following question. Each question carries equal marks.

Q2 How you relate coefficients of linear and volume expansion i-e α and β?

Q3 Explain the significance of size of plates and their separation in the parallel plate capacitor?

Q4 Three resistors of 40 Ω, 80 Ω, and 160 Ω are connected with 140 volt supply in parallel combination, find current in each resistor?

Q5 How moving Coil Galvanometer can be converted into Ammeter and voltmeter?

Q6 Find the Compton's scattering if photon is deviated at 45° (i.e $h = 6.63 \times 10^{-34}$ J.S, $C = 3 \times 10^8$ m/s; $m = 9.1 \times 10^{-31}$ Kg)

Q7 If Bohr's radius is r_0 find radii of first three energy level of Hydrogen?

Q8 Give three properties of each α, β, Υ radiation

Q9 What is self-induction in a coil?

Q10 What will be speed of an electron if its mass double its rest mass?

SECTION-C Marks /18
Descriptive Part

Note: Attempt any TWO of the following questions. Each question carries equal marks.

Q11 State & explain First law of thermodynamic and apply it on Isobaric & Iso thermal process.

Q12 What is photo electric effect? Explain the Einstein's views about photo electric effect?

Q13 Write notes on any one of following

   (i) Combination of resistor

   (ii) Transformer

   (iii) X – Rays spectra

(THE END)

Time: 2 Hours   M. Marks: 100

Note: (i) Attempt all questions. Each question carries one mark.
(ii) Write only the answer in full on the first specified page of answer copy with choice (A, B, C & D)

SECTION "A"   Marks: 50
MULTIPLE CHOICE QUESTIONS (MCQS)

Q.No.1 **Choose the correct answer for each from the given options:**

1) $\chi \to 0$ means that x:
   (a) x is very close to zero but not actually zero   (b) x approaches zero or x tends to zero
   (c) Both of a and b   (d) None of these

2) $\lim\limits_{x \to \infty} \left(\frac{a}{x}\right) =$
   (a) 0   (b) 1   (c) ∞ (d) None of these

3) The curve $9x^2 + 16y^2 = 144$ crosses the y – axis at the points:
   (a) $(\pm 4, 0)$ (b) $(0, 3)$ (c) $(\pm 3, 0)$ (d) $(0, \pm 3)$

4) The equation to the line through $(3,1)$ and parallel to $2x + 5y - 4 = 0$
   (a) $5x - 2y = 13$ (b) $2x + 5y = 11$ (c) $2x + 5y = 13$ (d) None of these

5) Centroid of triangle divides the median internally in the ratio:
   (a) $3:2$ (b) $2:3$ (c) $2:1$ (d) $3:4$

6) $\frac{d}{dx}$ is:
   (a) An operator   (b) A function   (c) Binary relation   (d) Both a and b

7) If $y = x^2 + x - 12$ then $\lim\limits_{x \to 3} \frac{f(x) - f(3)}{x - 3}$
   (a) 2   (b) 0   (c) 7   (d) -1

8) If the point on graphy $y = f(x)$ where $f(x)$ is neither increasing nor decreasing and $f'(x) = 0$ then that point is called:
   (a) Maximum Point   (b) Minimum Point   (c) Stationary Point   (d) Both a and b

9) $\int f(x)dx = F(x)$ when:
   (a) $f(x) = F(x)$ (b) $f'(x) = F(x)$ (c) $F'(x) = f(x)$ (d) Both a and b

10) Slope of non-vertical straight line with $\propto$ as its inclination is defined by:
    (a) $m = \tan \propto$ (b) $m = \frac{\sin\propto}{\cos\propto}$ (c) Both a and b   (d) None of these

11) The equation of chord of the parabola $y^2 = 12x$ joining $(0,0)$ and $(3,6)$ is:
    (a) $y = 2x$ (b) $y = 4x$ (c) $y = 2x + 1$ (d) $4y - 3x = 0$

12) $\int \frac{1}{5x-4} dx =$
    (a) $\frac{1}{5} \ln(5x - 4) + c$ (b) $\ln(5x - 4) + c$ (c) $\frac{1}{5} \ln(5x + 4) + c$ (d) $\frac{5}{(5x-4)^2}$

13) The straight line $ax + by + c = 0$ will be parallel to $x - axis$ if:
    (a) $a = 0$ (b) $b = 0$ (c) $c = 0$ (d) None of these

14) The set of point which are equidistant from a fixed point is called:
    (a) Circle   (b) Parabola   (c) Ellipse   (d) Hyperbola

15) The equation of tangent to the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ at the point (x_1, y_1) is:
    (a) $yy_1 = 2a(x - x_1)$ (b) $\frac{xx_1}{a^2} + \frac{yy_1}{b^2} = 1$ (c) $\frac{xx_1}{a^2} - \frac{yy_1}{b^2} = 1$ (d) None of these

16) $\int_a^b f(x)dx \, \forall \, a, b \in \mathbb{R}, a \leqslant b$ then integration is called:
    (a) Definite integral   (b) Indefinite integral   (c) Simple integral   (d) None of these

17) What does the scalar triple product given:
    (a) Area of square   (b) Volume of square   (c) Volume of cylinder
    (d) Volume of parallelopied

18) Two circles are said to be concentric if they have:
    (a) Same Centre   (b) Same radii   (c) Different Centre   (d) Same Diameter

19) The equation of nor mal to the hyperbola $x^2 - y^2 = 49 \, at \, (8, \sqrt{15})$ is:
    (a) $\sqrt{15} \, x + 8y = 16/\sqrt{15}$ (b) $8x - \sqrt{15y} = 4a$ (c) Both a and b   (d) Both b and c

20) The vector product of a vector by itself is always:
    (a) 1   (b) -1   (c) 0   (d) 2

21) $\lim\limits_{x \to 1} \frac{x^n - 1}{x - 1}$
    (a) n   (b) n-1   (c) 0   (d) n^2

22) The distance between two point $(-1,4)$ and $(3,-2)$ is:
    (a) $4\sqrt{13}$ units   (b) $2\sqrt{13}$ units   (c) 52 units   (d) $13\sqrt{2}$ units

23) Two lines $l_1 = a_1 x + b_1 y + c_1 = 0$ and $l_2 = a_2 x + b_2 y + c_2 = 0$ are perpendicular if and only if:
   (a) $a_1 a_2 - b_1 b_2 = 0$ (b) $a_1 a_2 + b_1 b_2 = 0$ (c) $a_1 b_2 - b_2 b_1 = 0$
   (d) $a_1 b_2 + a_2 b_1 = 0$

24) The rate of change of any physical quantity is called:
   (a) Continuity   (b) Derivative   (c) Antiderivative   (d) N.O.T

25) A function is said to be strictly increasing in (a,b) if for $x_1, x_2 \in (a,b)$ when $x_1 > x_2$ implies that:
   (a) $f(x_1) > f(x_2)$ (b) $f(x_1) < f(x_2)$ (c) $f(x_1) = f(x_2)$ (d) $f(x_1) \ne f(x_2)$

26) $\int \frac{1}{\sqrt{ay+b}} dy = 0$
   (a) $\frac{2}{a} \sqrt{ay+b} + c$ (b) $\frac{a}{2} \sqrt{ay+b} + c$ (c) $\sqrt{ay+b} + c$ (d) N.O.T

27) The equation of circle with centre (4,-2) and radius 8 units is:
   (a) $x^2 + y^2 - 8x + 4y - 44 = 0$ (b) $(x+4)^2 + (y-2)^2 = 64$
   (c) $x^2 + y^2 + 8x - 4y - 44 = 0$ (d) $(x-4)^2 + (y+2)^2 = 8$

28) If the line $y - x = c$ is tangent to parabola $y^2 = 4ax$ then C is equal to:
   (a) $\frac{1}{a}$ (b) a   (c) m   (d) -m

29) The physical quantity possesses both magnitude and direction is called:
   (a) Vectors   (b) Scalers   (c) Variable   (d) Constant

30) $\underset{x \to o}{Lim} \frac{e^{sinx}-1}{x}$
   (a) 0   (b) 1   (c) -1   (d) 2

31) If origin is mid point of $(x, 2)$ and $(2, y)$ then $(x, y) = ?$
   (a) (2,2)   (b) (-2,2)   (c) (-2,-2)   (d) (2,-2)

32) The equation of line parallel to the line x + y – 2 = 0 and passing through the point (0,1) is:
   (a) x + y – 2 = 0   (b) x – y – 2 = 0   (c) x + y + 1 = 0   (d) x + y – 1 = 0

33) Y = ln sinx, then dy/dx
   (a) $\frac{1}{sinx}$ (b) $Cosx$ (c) $Cotx$ (d) $Tanx$

34) The function $f(x) = x^2 + 3x + 2, x \in [-4, 1]$ increasing in:
   (a) (- 3/2, 1]   (b) [-4, - 3/2)   (c) (-4,0)   (d) (0,1)

35) $\int \sqrt{25 - x^2} dx =$
   (a) $sin^{-1}x + c$ (b) $\frac{1}{2} \left[x\sqrt{25 - x^2} + 25 \sin \frac{x}{5} \right] + c$
   (c) $\frac{1}{2} \left[x\sqrt{25 - x^2} + 25 ln(x + \sqrt{25 - x^2}) \right]$ (d) N.O.T

36) $ax^2 + by^2 + 2gx + 2fy + c = o$ represents a circle if:
   (a) $a = b \ne o$ (b) a > o, b = o or b > o   (c) a > o, b > o, | a | ≠ | b |
   (d) a > o, b > o, or a < o, b < o

37) The equation of tangent to the hyperbola $x^2 - 9y^2 = 9$ at the point $\left(5, \frac{-4}{3}\right)$ is:
   (a) $5x + 12y = 9$ (b) $5x - 12y = 9$ (c) $2x - 3y + 7 = 0$ (d) $4x - 3y + 9 = 0$

38) The volume of parallelepiped whose edges are represented by a = [2, -3, 4], b = [1, 2, -1] and e = [3, -1, 2] is:
   (a) 5   (b) 6   (c) 7   (d) 8

39) $\underset{x \to \infty}{Lim} \left(\frac{x}{1+x}\right)^x$
   (a) e^{-1} (b) $e^{1/2}$ (c) e^2 (d) e^3

40) The point of concurrency of medians of triangle is called _____ of triangle.
   (a) In Centre   (b) Circum Centre   (c) Orthocenter   (d) Centroid

41) Which of the following point lies below the line 10x-12y + 17 = 0
   (a) (20,15)   (b) (1,3)   (c) $(0, \frac{17}{12})$ (d) (-2, 4)

42) If $x = at^2$, $y = 2at$ then $\frac{dy}{dx}$ at t = 1 is:
   (a) 0   (b) 1   (c) $\frac{1}{t}$ (d) 2a

43) The function $f(x) = x^2 - x - 2$ has minimum value at:
   (a) x = 0   (b) $x = \frac{1}{2}$ (c) $x = \frac{9}{4}$ (d) x = - 9/4

44) $\int e^{2-3x} dx =$
   (a) $\frac{e^{2-3x}}{3} + c$ (b) $-\frac{(e^{2-3x})}{3} + c$ (c) $\frac{e^{2-3x}}{2} + c$ (d) $\frac{e^{2-3x}}{4} + c$

45) If $(x, 3)$ and $(3,5)$ are end points of a diameter with centre (2,y) then (x,y) is:
   (a) (1,4)   (b) (4,1)   (c) (8,2)   (d) (2,8)

46) If a = [P, 1,0], b = [1, 1, 3] and c = [2, 1, -2] are coplanar then P = ?
   (a) $\frac{3}{5}$ (b) $\frac{4}{5}$ (c) $\frac{6}{5}$ (d) $\frac{8}{5}$

47) $\int x \cos x \, dx$
   (a) $x \sin x + \cos x + c$ (b) $x \cos x + \sin x + c$ (c) $x \sin x - \cos x + c$
   (d) $x \cos x - \sin x + c$

48) A line parallel to y – axis has an inclination 90° its slope is:
   (a) 1   (b) 0   (c) ∞ (d) N.O.T

49) The point (3a, a) is 6 unit from the line 5 – 12y – 3 = 0 then a =?
   (a) 27   (b) -25   (c) -25 and 27   (d) +27

50) Angle between lines 4x + 5 = 0 and 6y – 7 = 0 is:
   (a) 30°   (b) 45°   (c) 0°   (d) 90°

SECTION "B"   Marks: 30

Note: Solve any SIX of the following questions. Each Question Carries 05 Marks.

Q.No.2   Find the limit of $\displaystyle \lim_{x \to 0} \frac{9e^x - e^{-x} - 8}{x}$:

Q.No.3   Evaluate $\int x^3 (x^2 - 1)^{\frac{4}{3}} \, dx$:

Q.No.4   Find $\frac{dy}{dx}$ when $Y = (Sin^{-1}x)^{lnx}$

Q.No.5   Find the equation of Line through intersection of the line $7x - 13y + 46 = 0$ and $19x + 11y - 41 = 0$ and passing through the point (3,1)

Q.No.6   The line joining the point P(2,-3) and Q(-4,5) is trisected. Find the coordinates of the point of trisection

Q.No.7   Find the extreme value of the function 'f' given by f(x) = (x^2-x) (x-2) $\forall x \in \mathbb{R}$

Q.No.8   Find the equation of the circle which passes through the point (-2,-4) and has the same center as the circle whose equation is $x^2 + y^2 - 4x - 6y - 23 = 0$

Q.No.9   Find the equation of the tangent and normal at the point (3,6) to the parabola $y^2 = 12x$

Q.No.10 Find Cos $(\overline{AB}, \overline{AC})$ in a triangle whose vertices are A (-2,0), B(4,3) and C(5,-1)

SECTION "C"   Marks: 20
Descriptive Answers

Note: Solve any TWO of the following question: Each question (6+4) Marks.

Q.No.11 (a) Find the equation of the straight line which passes through the point (-3,2) and is such the portion of it between the axes is divided by the point in the ratio 1:2.

(b)   Find $\int \frac{x}{\sqrt{4+x^2}} \, dx$

Q.No.12 (a) Show that the rectangle of maximum area inscribed in a circle of radius "a" is a square of area $2a^2$.

(b)   Find the centre and radius of the circle $x^2 + y^2 - 3x + y = \frac{15}{4}$

Q.No.13 (a) Find the unit vector perpendicular to both of the vectors $\hat{i} + 2\hat{j} + 2\hat{k}$ and $3\hat{i} - 2\hat{j} - 4\hat{k}$. Also calculate the sine of the angle between these two vectors.

(b)   Find $\frac{dy}{dx}$ at "t" for the curve given by equation x = ln t + sint, y = e^t + cost

THE END

BOARD OF INTERMEDIATE & SECONDARY EDUCATION, HYDERABAD

Excellence – Equity – Empathy

Time: 1:30 Hour   BOTANY-II MODEL PAPER (CLASS XII)   Marks: 42

SECTION "A"   /22

MULTIPLE CHOICE QUESTIONS (MCQ's)

Q1: Choose the correct answer for each from the given options.
Each MCQ having 01 mark.

(i) The whole body of Bryophytes plants are made up of _____ tissues.
(a) Only Parenchyma   (b) Both Parenchyma & Collenchyma
(c) Only Collenchyma   (d) Both Collenchyma & Sclerenchyma

(ii) Plant thermoregulation affects the following:
(a) Membrane properties   (b) Metabolism of cells
(c) Composition of Solutes   (d) All those

(iii) The highest rate of Transpiration occurs in:
(a) Hydrophytes   (b) Halophytes   (c) Mesophytes   (d) Xerphytes

(iv) Thermonastic movement in India Telegraph Plant occurs due to:
(a) Low temperature   (b) High Temperature   (c) Darkness   (d) Turgidity

(v) If a small segment of Chromosomes may be missing a situation is called:
(a) Deletion   (b) Duplication   (c) Inversion   (d) Translocation

(vi) In which of the following types of sexual reproduction plants having morphologically similar but physiologically dissimilar gametes?
(a) Isogamy   (b) Anisogamy   (c) Oogamy   (d) Conjugation

(vii) The term "ECOSYSTEM" was first used by:
(a) Hult   (b) Tansely   (c) T.H.Morgan   (d) Darwin

(viii) Self Pollinaiton not occurs in Dioecious plants because they are:
(a) Unisexual   (b) Having only Staminate Flowers
(c) Having only Carpellate Flowers   (d) All of these

(ix) The sea below 2000 meters is called:
(a) Euphotic zone   (b) Neritic zone   (c) Abyssal zone   (d) Benthic zone

(x) In Epigeal Germinaiton;
(a) Cotyledons remain below the soil   (b) Cotyledons are carried above the soil
(c) Germinaiton starts due to rapid growth of Epicotyl   (d) Both b & c

(xi) All are the types of spontaneous plant movements except;
(a) Tropic   (b) Nutation   (c) Nastic   (d) Turgor

(xii) Guttation is common is tropical rain forests due to following reasons except;
(a) high rate of water absorption   (b) Higher Rainfall
(c) High Humidity   (d) Higher rate of Transpiration

(xiii) One complete turn of DNA contains;
(a) 5 Mono Nucleotides   (b) 10 Mono Nucleotides
(c) 15 Mono Nucleotides   (d) 20 Mono Nucleotides

(xiv) Plant produces heat shock proteins above _____ temperature.
(a) 30^0C   (b) 35^0C   (c) 37^0C   (d) 40^0C

(xv) Growth in plant organs involves;
(a) Cell Division   (b) Cell Elongation   (c) Cell Maturation   (d) All of these

(xvi) Grasslands covers about _____ of earth surface and heaving _____ rainfall in a year.
(a) 25% and 20-95cm   (b) 19% and 100-125cm
(c) 19% and 30-75cm   (d) 25 and 40-85cm

(xvii) Which on is not an example of sex-lined inheritance?
(a) Hemophilia   (b) Sickle cell anemia   (c) Hemophilia   (d) Colorblindness

(xviii) Which one is not due to Meiosis?
(a) Maintenance of Chromosomal number in species   (b) Evolution of species
(c) Healing of wounds   (d) Variation among individuals

(xix) Following affects the topography of earth except;
(a) Slope   (b) Altitude   (c) Succession   (d) Exposure

(xx) Bivalents are completely separated by the process of _____.
(a) Synapsis   (b) Linkage   (c) Terminalizaiton   (d) Crossing over

(xxi) Synthetic Auxin is:
(a) IAA   (b) IBA   (c) NAA   (d) PAA

(xxii) When red eyed female Drosophila (X^RX^r) is crossed with white eyed male Drosophila (X^rY), then their offspring shows red eyes and white eyes in a _____ ratio.
(a) 1 : 2   (b) 2 : 2   (c) 3 : 1   (d) 4 : 0

- - - - - - - - - - - - THE END - - - - - - - - - - - - -

BOARD OF INTERMEDIATE & SECONDARY EDUCATION, HYDERABAD

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Time: 1:30 Hour   BOTANY-II MODEL PAPER (CLASS XII)   Marks: 42

SECTION "B"   /12

NOTE: <u>Answer any FOUR of the following questions. Each carries 02 marks.</u>

Q.2   Why there are only four types of nucleotides found in DNA?

Q.3   Distinguish between Neritic and Oceanic regions of Marine Ecosystem?

Q.4   Define Tropism. Enlist different types of tropic movements found in plants.

Q.5   Differentiate between any one of the following in tabulated form:

    (i)   Auxin & Gibberellins

    (ii)   Complete Dominance & Incomplete Dominance

Q.6   Define any two of the following:

    (i)   Biome

    (ii)   Allele

    (iii)   Monoecious

    (iv)   Edaphic factors

Q.7   Why the Mendelian ratios are changed?

Q.8   Why meiosis is necessary in the life cycle of plants and animals?

SECTION "C"   /08

NOTE: <u>Attempt any ONE from the following. Each question carries 08 marks.</u>

Q.9   Define and explain the law of segregation.

<div align="center">OR</div>

Prove (with the help of genetic crosses) that Husband is responsible for the sex of his children and not the wife.

Q.10   How fresh water is different from marine water? Describe in detail various components of a pond ecosystem.

<div align="center">- - - - - - - - - - - - - THE END - - - - - - - - - - - - -</div>

SECTION-A   Marks: 22
MULTIPLE CHOICE QUESTION (MCQ'S)

Q1. **Choose the correct answer for each from the given options.**

i. **Glands are located on top of kidney are called**
(a) Thymus   (b) Adrenal gland   (c) Pancreas   (d) Thyroid

ii. **The outer region of kidney is called as**
(a) Renal pelvis   (b) Renal medulla   (c) Renal pyramid   (d) Renal cortex

iii. **Skeleton is totally absent in**
(a) Sponge   (b) Star fish   (c) Fish   (d) Amoeba

iv. **Bones of ankle are called**
(a) Tarsal   (b) Carpal   (c) Meta tarsal   (d) Meta carpal

v. **Each myosin filament is surrounded by**
(a) 4 actin filament (b) 6 actin filament (c) 8 actin filament (d) NOT

vi. **Bone of skull are joined by**
(a) Fixed joint   (b) Sliding joints   (c) Pivot joint   (d) Hinge joint

vii. **It is not way of obtaining heat by an organism**
(a) Solar radiation (b) Metabolism   (c) muscle contraction (d) Sweating

viii. **The most abundant component of urine is**
(a) Urea   (b) Water   (c) Ammonia   (d) Uric acid

ix. **Hypothalamus, amygdale & hippocampus are part of**
(a) limbic system   (b) thalamus   (c) reticulum formation (d) NOT

x. **Knee-jerk is an example of**
(a) Taxes   (b) reflex   (c) learning   (d) insight learning

xi. **End of fertility in a human female is**
(a) Puberty   (b) Ovulation   (c) Menses   (d) Menopause

xii. **Ovulation is initiated by hormone**
(a) FSH   (b) LH   (c) Estrogen   (d) progesterone

xiii. **Rise in body temperature in case of heat stroke is an example of**
(a) Positive feed back   (b) Negative feed back
(c) Both   (d) None of these

xiv. **Set point of thermoregulation in human is**
(a) 30 C   (b) 37 C   (c) 98.6 F   (d) both b and c

xv. **Which of the following hormones causes development of male characteristics**
(a) Androgen   (b) Thyroxin   (c) Adrenaline   (d) Estrogen

xvi. **A more of less genetically isolated population is called**
(a) Stable   (b) Genetic drift   (c) Genetic equilibrium (d) N.O.T

xvii. **Which of the following causing depletion of O3**
(a) CL2   (b) O2   (c) N2   (d) N.O.T

xviii. **Total number of bones in human limbs**
(a) 90   (b) 120   (c) 30   (d) 60

xix. **Depolarization and re-polarization of neurolemma occur during**
(a) RMP   (b) Action potential   (c) Synapse   (d) N.O.T

xx. **The coelom is formed by splitting the following segment of mesoderm**
(a) Lateral plate   (b) Mesomere   (c) Hypomere   (d) Epimere

xxi. **The role of which of the following who altogether neglected by Darwin**
(a) Variations   (b) Minor variations   (c) Mutations   (d) A.O.T

xxii. **Zoology is the branch of _____**
(a) Science   (b) Electrical   (c) Biology   (d) N.O.T

The End

ZOOLOGY MODEL PAPER

Time: 02:00 hrs   XII (Pre-Medical)   Marks: 43

SECTION-B   Marks: 12
Short Questions

Note: Attempt any FOUR questions each question carries 03 marks.

Q2.   Distinguish between any one.

   i.   Renewable & non renewable resources
   ii.   Darwin & Lamarck Theory

Q3.   Women after menopause commonly suffer deformity of bones, name condition & also reaso

Q4.   How do blood vessels in the skin help regulate body temperature during hot and cold ext condition?

Q5.   Draw a diagram of sarcomere and label its parts.

Q6.   What does negative feed back refer to?

Q7.   Why kidney act both osmeregulatory and excretory organ?

Q8.   What is the common name of osmoexcretory cells of flatworms & why there are called so?

SECTION-C   Marks: 09
Long Answers

Note: Attempt any one question. Each question carries 08 marks (part-A 5 marks and Part-B 3 m

Q10(a) What is joint? Describe different types of joints.
Q10(b) Define liver? Describe at least two functions.

Q11(a) What is nerve impulse? Explain the mechanism of transmission of nerve impulse?
Q11(b) Describe structure of nephron.

The End