VINAYAKA MISSION'S RESEARCH FOUNDATION, SALEM

(Deemed to be University under section 3 of the UGC Act 1956)

Computer Science

Instructions / Note:

1. Answer all the questions. Each question carries one mark.
2. No negative marks for wrong answers.
3. Read each question carefully and answer in the OMR sheet provided for each question with only blue/ black pen to fill the circles in the OMR Sheet.
4. Return the question paper along with the OMR sheet.

Time: 90 Minutes
Venue: _____.

PART - B [35X1=35]

1. A file is downloaded in a home computer using a 56 kbps MODEM connected to an Internet Service Provider. If the download of file completes in 2 minutes, what is the maximum size of data downloaded?

   a) 112 Mbits
   b) 6.72 Mbits
   c) 67.20 Mbits
   d) 672 Mbits

2. In _____ CSMA protocol, after the station finds the line idle, it sends or refrains from sending based on the outcome of a random number generator.
   a) Non-persistent
   b) 0-persistent
   c) 1-persistent
   d) p-persistent

3. What is the maximum length of CAT-5 UTP cable in Fast Ethernet network?
   a) 100 meters
   b) 200 meters
   c) 1000 meters
   d) 1100 meters

4. The _____ is a set of standards that defines how a dynamic web document should be written, how input data should be supplied to the program, and how the output result should be used.
   a) Hypertext Markup Language

b) File Transfer Protocol
c) Common Gateway Interface
d) Simple Mail Transfer Protocol

5. The count-to-infinity problem is associated with _____
   a) Flooding algorithm
   b) Hierarchical routing algorithm
   c) Distance vector routing algorithm
   d) Link State routing algorithm

6. Consider an undirected graph G with 100 nodes. The maximum number of edges to be included in G so that the graph is not connected is _____
   a) 4851
   b) 2451
   c) 4950
   d) 9900
7. The minimum number of nodes in a binary tree of depth d (root is at level 0) is _____
   a) $2^d - 1$
   b) $2^{d+1} - 1$
   c) d
   d) d + 1
8. The efficient data structure to insert/delete a number in a stored set of numbers is _____
   a) Queue
   b) Doubly linked list
   c) Linked list
   d) Binary tree
9. The number of eight-bit strings beginning with either 111 or 101 is _____.
   a) 64
   b) 128
   c) 256
   d) 265

10. Consider the In-order and Post-order traversals of a tree as given below:
    In-order: j e n k o p b f a c l g m d h i
    Post-order: j n o p k e f b c l m g h i d a
    The Pre-order traversal of the tree shall be
    a) a b f e j k n o p c d g l m h i
    b) a b c d e f j k n o p g l m h i
    c) a b e j k n o p f c d g l m h i
    d) j e n o p k f b c l m g h i d a

11. Which one of the following set of gates is best suited for 'parity' checking and 'parity' generation?
    a) AND, OR, NOT
    b) EX-OR, EX-NOR
    c) NAND, NOR
    d) EX-NOR, NOR
12. In which one of the following, continuous process improvement is done?
    a) ISO 9001
    b) RMMM
    c) SPM
    d) CMM
13. Working software is not available until late in the process in _____
    a) Waterfall Model
    b) Prototyping Model
    c) Spiral Model
    d) Incremental Model
14. Equivalence partitioning is a _____ testing method that divides the input domain of a program into classes of data from which test cases can be derived.
    a) White box
    b) Regression
    c) Black box
    d) Smoke

15. Linked Lists are not suitable for _____.
    a) Binary Search
    b) Polynomial Manipulation
    c) Insertion
    d) Selection Sort

16. What is the size of the following Union?
    Assume that the size of int = 2, size of float = 4, size of char = 1

```
union tag {
int a;
float b;
char c;
};
```

    a) 2
    b) 1
    c) 4
    d) 7

17. Usage of Preemption and Transaction Rollback prevents _____.
    a) Unauthorized usage of data file
    b) Deadlock situation
    c) Data manipulation
    d) File preemption

18. The _____ language was originally designed as the Transformation Language for Style Sheet facility
    a) XML
    b) XQuery
    c) XPath
    d) XSTL

19. Views are useful for _____ unwanted information, and for collecting together information from more than one relation into a single view.
    a) Deleting
    b) Hiding
    c) Merging
    d) Highlighting

20. A method to provide secure transmission of email is called ____.
    a) TLS
    b) SA
    c) IPSec
    d) PGP

21. Which of the following set of UNIX commands will always display "WELCOME"?
    a) Export title=WELCOME; Echo $title
    b) Title = WELCOME; export $ title; sh –c "echo $title
    c) Title = WELCOME; export title; sh –c "echo $title"
    d) Title = WELCOME; echo $title
22. Which of the following is not a part of an expert system shell?
    a) Knowledge Base
    b) Inference Engine
    c) Explanation Facility
    d) Search Technique
23. If an artificial variable is present in the 'basic variable' of optimal simplex table then the solution is _____
    a) Alternative solution
    b) Infeasible solution
    c) Unbounded solution
    d) Degenerate solution

24. _____ refers to the discrepancy among a computed, observed or measured value and the true specified or theoretically correct values.
    a) Fault
    b) Failure
    c) Defect
    d) Error
25. Which logic family dissipates the minimum power?
    a) DTL
    b) TTL
    c) CMOS
    d) ECL

26. Which of the following electronic component is not found in IC's?
    a) Inductor
    b) Diode
    c) Resistor
    d) Transistor

27. The instruction: MOV CL, [BX] [DI] + 8 represent the _____ addressing mode
    a) Based relative
    b) Indexed relative
    c) Based indexed
    d) Register indexed

28. A binary ripple counter is required to count up to 16383. How many flip-flops are required?
    a) 16382
    b) 14
    c) 8191
    d) 512
29. The time complexity of recurrence relation T(n) = T(n/3) + T(2n/3) + O(n) is
    a) O(Ig n)
    b) O(n)
    c) O(n2)
    d) O(n Ig n)

30. Improving processing efficiency or performance or restructuring of software to improve changeability is known as
    a) Corrective maintenance
    b) Perfective maintenance
    c) Adaptive maintenance
    d) Code maintenance

31. In ____, modules A and B make use of a common data type, but perhaps perform different operations on it
    a) Stamp coupling
    b) Data coupling
    c) Control coupling
    d) Content coupling

32. Consider the following two function declarations:
    (i) int *f( )
    (ii) int (*f)( )
    Which of the following is true?
    a) Both are identical.
    b) The first is a correct declaration and the second is wrong.
    c) Both are different ways of declaring pointer to a function.
    d) The first declaration is a function returning a pointer to an integer and the second is a pointer to function returning integer.

33. MPEG involves both spatial compression and temporal compression. The spatial compression is similar to JPEG and temporal compression removes _____ frames.
    a) Temporal
    b) Voice
    c) Redundant
    d) Spatial

34. If user A wants to send an encrypted message to user B. The plain text of A is encrypted with the _____.
    a) Public Key of user A
    b) Public Key of user B
    c) Private Key of user A
    d) Private Key of user B

35. The portion of Windows 2000 operating system which is not portable is.
    a) Processor management
    b) User interface
    c) Device management
    d) Virtual memory management

English

Part-B **[**35X1=35]

1. Who is the founder of psychoanalytic theory?
   B. Simone de Beauvoir
   C. Sigmund Freud
   D. Bhaktin
   E. Jean Paul Sartre

2. Who said 'One is not born a Woman, but becomes one'?
   A. Toni Morrison
   B. Simone de Beauvoir
   C. Shashi Deshpande
   D. Anita Desai

3. "With Chaucer is born our real poetry" Who holds this view?
   A. Matthew Arnold
   B. Spenser
   C. Dryden
   D. Addison

4. Philip Sidney's *Apology for Poetry* is an example of
   A. Theoretical Criticism
   B. Comparative Criticism
   C. Historical Criticism
   D. Literary Criticism

5. What was the first published title of Christopher Marlow's play *The Jew of Malta*?
   A. The Tragedy of the Jew of Malta
   B. The Tragedy of the Rich Jew of Malta
   C. The Famous Tragedy of the Rich Jew ofMalta
   D. The Story of the Rich Jew of Malta

6. *Adonais* is an elegy written on the death of
   A. John Keats
   B. Lord Byron
   C. Percy Bysshe Shelley
   D. Wordsworth

7. 'Alonso' is the king in which Shakespeare's play?
   A. Hamlet
   B. Othello
   C. Henry VI
   D. Tempest

8. Simon De Beauvoir was a _____philosopher.
   A. Italian
   B. French
   C. English
   D. German

9. In which novel of George Orwell we come across a character called 'Big Brother'?
   A. Burmese Days
   B. Inside the whale
   C. 1984
   D. The Road to Wigan Pier

10. *Biographia Literaria* by Samuel Taylor Coleridge was published in
    A. 1815
    B. 1816
    C. 1817
    D. 1818

11. Richard Carstone, Ada Clare is a character from Dickens's novel.
    A. Oliver Twist
    B. Dombey and Sons
    C. David Copperfield
    D. Bleak House

12. Bertolt Brecht was a dramatist and poet
    A. Russian
    B. French
    C. Italian
    D. German

13. Naom Chomsky is a professor of
    A. Drama
    B. History
    C. Language
    D. Literature

14. The Criterion is an influential literary periodical launched as a quarterly was edited by
    A. T.S Eliot
    B. W.B Yeats
    C. Ted Hughes
    D. Wallace Stevens

15. *The Critic* is a comedy by
    A. Jonson
    B. William Congreve
    C. Christopher Marlowe
    D. Richard Brinsley Sheridan

16. Crossing the Bar is a poem in _____stanzas by Lord Tennyson.
    A. Four
    B. Five
    C. Six
    D. Three

17. Culture and Anarchy is a _____by Mathew Arnold
    A. Novel
    B. Play
    C. Poetry
    D. Criticism

18. "I wandered lonely as a cloud" is a line from which Wordsworth poem
    A. Michael
    B. Prelude
    C. Excursions
    D. Daffodils

19. Where was G.V Desani born?
    A. Bombay
    B. Nairobi
    C. New York
    D. Trinidad

20. The Deserted Village by Goldsmith was published in the year
    A. 1740
    B. 1760
    C. 1770
    D. 1790

21. The Devil is An Ass is a comedy
    A. John Fletcher
    B. Chistopher Marlowe
    C. Ben Jonson
    D. William Congreve

22. A Game of Chess is a comedy by
    A. Thomas Middleton
    B. Northrope Frye
    C. Christopher Marlowe
    D. John Galsworthy

23. Kubla Khan is a poem by Coleridge is also called
    A. A Dream
    B. Lovers
    C. A Vision
    D. A vision in a Dream

24. The Kraken is a short poem by
    A. Alfred Tennyson
    B. Robert Browning
    C. Dante Gabriel Rossetti
    D. Percy Bysshe Shelley

25. The Autobiography of an Unknown Indian is written by
    A. V. S. Naipaul
    B. Nirad C. Chaudhary
    C. S. Radhakrishanan
    D. Manohar Malgonkar

26. Age of Innocence is
    A. a book of verse by William Blake
    B. a novel by Edith Wharton
    C. a play by Eugene O'Neil
    D. an absurd drama by Edward Albee

27. Grapes of Wrath is written by
    A. John Steinbeck
    B. F.Scott. Fitzgerald
    C. Gertrude Stein
    D. Nathaniel Hawthorn

28. Who is the author of the book 'The Queer Art of Failure'?
    A. Jack Halberstam
    B. Judith Butler
    C. Michel Foucault
    D. Berlant and Warner
29. Name the Indian-Englishwriter who got the Austrian State Prize for European Literature in 1992.
    A. Vikram Seth
    B. AmitavGhose
    C. Salman Rushdie
    D. Nirad C. Chaudhry
30. *She Stoops to Conquer* was originally published in the year.
    A. 1771
    B. 1775
    C. 1800
    D. 1885.
31. Oliver Goldsmith is an/a _____ novelist.
    A. British
    B. Canadian
    C. Irish
    D. Persian.
32. Sara Fielding is a younger sister of _____.
    A. Samuel Richardson
    B. Oliver Goldsmith
    C. Samuel Richardson
    D. Henry Fielding
33. Samuel Richardson's novel *Pamela* is subtitled as
    A. Rewarded
    B. Virtue Rewarded
    C. Realistic Virtue
    D. Virtue
34. According to Spivak 'Subaltern' is
    A. Third World Women and Men
    B. Submissive Women
    C. Multiply Oppressed
    D. Gender discrimination

35. Who wrote the poem 'To Be or not To Be'?
    A. L. S. Rokade
    B. Margret Atwood
    C. David Lan
    D. Simone de Beauvoir

Physics

Part-B [35x1=35]

1. Which of the following will have dimension of time?
   A. LC
   B. (b) $\frac{R}{L}$
   C. (c) $\frac{L}{R}$
   D. (d) $\frac{C}{L}$

2. The surface integral of this vector over the surface of a cube of size a and centred at the origin
   A. Zero
   B. 2π
   C. $2\pi a^3$
   D. 4π

3. Inverse of a matrix exists, if
   A. Matrix is singular
   B. Matrix is non-singular
   C. Matrix is Hermitian
   D. Matrix is Skew Hermitian

4. The vector $[1,2,4]$, $[1,0,0]$, $[0,1,0]$, $[0,0,1]$ are
   A. Linearly dependent
   B. Linearly independent
   C. Orthogonal
   D. None of these

5. Which of the following is/are even function?
   A. (a) x^3
   B. (b) $\sin x$
   C. (c) $\tan x$
   D. (d) $\cos x$ and $\sec x$

6. In an elastic collision
   A. Momentum is conserved, but energy is not conserved
   B. Momentum is not conserved, but energy is conserved
   C. Neither Momentum nor energy is conserved
   D. Both Momentum and energy are conserved

7. Assume the earth to be moving in a circular orbit around the sun. What is the work done by the sun's gravitational force on the earth in completing half the orbit?
   A. Kinetic energy of the earth
   B. Potential energy of the earth
   C. Half the Potential energy of the earth
   D. Zero

8. Which one of the following is a non-coservative force?
   A. Electrostatic Force
   B. Gravitational Force
   C. Viscous Force
   D. Inter-atomic Force

9. A station moving in circular orbit around the earth goes into a new bound orbit by fixing its engine radially outwards. This orbit is
   A. Large Circle
   B. Smaller Circle
   C. An Ellipse
   D. A Parabola

10. The apparent weight of a person in a moving lift depends on
   A. The actual mass of the person
   B. Acceleration due to gravity
   C. Acceleration of the lift
   D. Velocity of the lift

11. The electric field inside a spherical shell of uniform surface charge density is
   A. Zero
   B. Non – Zero constant
   C. Directly Proportional to distance from centre
   D. Inversely Proportional to distance from centre

12. The electric field intensity on the surface of a charged conductor is
   A. Zero
   B. (b) Directed normally to the surface
   C. Directed tangent to the surface
   D. Directed along 45° to the surface

13. The electric field $\vec{E}$ is
   A. Normal
   B. Tangent
   C. Opposite
   D. Unrelated to the electric equipotential lines

14. The field of Magnetic vector $\vec{B}$ is always
   A. Irrotational
   B. Solenoid
   C. Non-solenoid
   D. Both a and c

15. If proton is moved against the coulomb force of an electric field
    A. Work is done by the electric field
    B. Energy is used from some outside source
    C. Strength of field is decreased
    D. Energy of the system is decreased

16. For a thermodynamic system, work done in a process depend upon
    A. The path
    B. State of the system
    C. External Pressure
    D. Nature of the system

17. In isothermal change, the internal energy of molecules
    A. May be increase or decrease
    B. Does not change
    C. Increase
    D. Decrease

18. T – S diagram for a cornet cyclic is
    A. Rectangle
    B. Circle
    C. Ellipse
    D. Does not change

19. A potential energy of the molecules of an ideal gas is
    A. Equal to the Kinetic energy
    B. Equal to the Internal energy
    C. Zero
    D. Equal to the external wok

20. The quantity remaining constant in the isothermal process of an ideal gas is
    A. Heat
    B. Internal energy
    C. Pressure
    D. Temperature and Pressure

21. The avalanche breakdown in a PN – Junction is due to
    A. Shift of fermi level
    B. Cumulative effect of Conduction band and electron collision
    C. Forbidden gap
    D. High impurity concentration

22. Which one of the following statement is not true in case of Zener diode
    A. This is no similarity between forward diode and Zener diode
    B. Zener diode has sharp breakdown voltage
    C. Zener diode always reverse bias
    D. The Zener diode heavily doped diode

23. The device is used for automatically counting the number of underground train passing passed a point of route
    A. Integrated Circuit
    B. Light Emitting Diode
    C. Mechanical Transistor
    D. Photo electric cell

24. The effect of transistor FET is a
    A. Current controlled device
    B. Voltage controlled device
    C. Both a and b
    D. Current controlled nor Voltage controlled device

25. Field Effect Transistor is a
    A. Unipolar device
    B. Bipolar Junction Transistor
    C. Unijunction device
    D. Device with low input impedance

26. The de-Broglie wavelength of a particle having KE -= E_k is given by
    A. $\lambda = \frac{h}{\sqrt{E_k}}$
    B. $\lambda = \frac{h}{\sqrt{2mE_k}}$
    C. $\lambda = \frac{h}{\sqrt{mE_k}}$
    D. $\lambda = \frac{h}{\sqrt{3mE_k}}$

27. The de-Brogli votse wavelength of a charge q and accelerated through a potential difference of V volts is
    A. $\lambda = \frac{h}{\sqrt{mqV}}$
    B. $\lambda = \frac{hm}{\sqrt{qV}}$
    C. $\lambda = \frac{h}{\sqrt{2mqV}}$
    D. $\lambda = \frac{h}{mqV}$

28. Which of the following wavefunctions can be solution of Schrodinger's equation for all values of x (x >0)?
    A. $\psi = A\sec x$
    B. $\psi = A\tan x$
    C. $\psi = Ae^{x^2}$
    D. $\psi = Ae^{-x^2}$

29. For a particle miving in x - direction an having a wavefunction $\psi = A\sin(kx - \omega t)$, its energy is
    A. $\frac{k^2\bar{h}^2}{2m}$
    B. $\frac{k\bar{h}}{2m}$
    C. $\frac{\bar{h}^2k^2}{m}$
    D. $m^2\bar{h}^2$

30. If n represents the number of eigenstates of a hydrogen atom, then its dicrete energy levels are proportional to
    A. n
    B. n^2
    C. $\frac{1}{n}$
    D. $\frac{1}{n^2}$

31. The knetic energy of an electron in atom is
    A. Half of its PE
    B. Twice its PE
    C. Equal to its PE
    D. Thrice its PE

32. The length of semi-major axis of an electron is an elliptical orbit is determined
    A. Only by the principal quantum number
    B. Only by the azimuthal quantum number
    C. Both by principal and azimuthal quantum numbers
    D. None of the above

33. L - S coupling occurs often in
    A. All atoms
    B. Lighter atoms
    C. Heavier atoms
    D. None of these

34. The spectrum of sodium atom can be explained by considering
    A. J - J coupling
    B. Relativistic correction
    C. L - S coupling
    D. Heitler -London theory

35. Line broadening is not due to
    A. Doppler effect
    B. Uncertanity principle
    C. Rayleigh criterion
    D. Pressure

Chemistry

Part-B [35x1=35]

1. The ligand system present in vitamin B_{12} is:

    A. Porphyrin
    B. Corrin
    C. Phthalocyanine
    D. Crown ether

2. The temperature at which a real gas obeys the ideal gas laws over a wide range of pressure is

    A. Critical temperature
    B. Boyle temperature
    C. Inversion temperature
    D. Reduced temperature

3. In which rearrangement, reaction intermediate is carbene?

    A. Pinacol-Pinacolone
    B. Stevens
    C. Wolff
    D. Wagner-Meerwein

4. Quartering is ……

A. 1/3 of the substance
B. 1/4 of the substance
C. 1/2 of the substance
D. None of the above

5. Consider the following statements with respect to Cytochrome P–450

i. It has histidine coordinated to iron centre
ii. It is a membrane bound metalloenzyme
iii. It has Fe (III) ion in the resting state of the enzyme

The correct statement(s) is/are

A. A, B
B. A, C
C. B, C
D. A only

6. Which among the following is the strongest oxidizing agent?

A. H_2O_2
B. $K_2Cr_2O_7$
C. O_3
D. $KMnO_4$

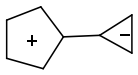
7. Hammett equation was applicable for only reaction involving benzoic acid derivatives with substituent in position of _____?

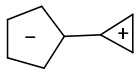
A. Ortho and Para
B. Para and Meta
C. Meta and Ortho
D. all of the above

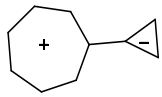
8. The reversible work done by one mole of an ideal gas when it is compressed isothermally At 27^oC from 1atm.to 10 atm. Pressure is

A. 1381 cal
B. -1381 cal
C. 270 cal
D. 243 cal

9. Which is non-aromatic from the following?

A) 

B) 

C) 

D) None of these

10. At a given pressure the boiling point is the same as the

A. Freezing point
B. Liquefaction point
C. Critical temperature
D. Triple-point temperature

11. During the binding of O_2 to myoglobin (consider 'heme' in xy-plane), the molecular orbital of O_2 and atomic orbital of Fe involved in the formation of the o-bond is

A. π^* and dz^2
B. π^* and dxz
C. π and dxz
D. π and dz^2

12. Which compound is zero valent metal complex?

A. $[Cu(NH_3)_4]SO_4$
B. $[Pt(NH_3)_2Cl_2]$
C. $[Ni(CO)_4]$
D. $K_3[Fe(CN)_6]$

13. Chelate effect is

A. predominantly due to enthalpy change
B. predominantly due to entropy change
C. Independent of ring size
D. due to equal contribution of entropy and enthalpy change

14. Using symmetry considerations show if or not the two H's of CH_2Cl_2, CH_2ClF are homotopic or enantiotopic.

A. Homotopic and Enantiotopic
B. Homotopic and Homotopic
C. Enantiotopic and Enantiotopic
D. Enantiotopic and Homotopic

15. What is the principle of complexometric titration?

A. To determine the mixture of different metal ions in solution
B. To determine the alkali metal ions in solution
C. To determine only the selectively ions in solution
D. All the above

16. Hoarfrost line refers to

A. Vaporisation curve for liquid water
B. Sublimation curve for ice
C. Fusion curve
D. Vaporisation curve for super cooled liquid water

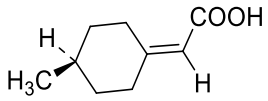
17. How many stereo isomers are possible for the complex of $[NiC_{l2}(en)_2]$?
ethylenediamine = $NH_2CH_2CH_2NH_2$

A. 5
B. 2
C. 3
D. 6

18. The coordination geometries around the copper ion of plastocyanin (a blue-copper protein) in oxidized and reduced form, respectively, are

A. tetrahedral and square-planar
B. square-planar and tetrahedral
C. distorted tetrahedral for both
D. ideal tetrahedral for both

19. Give the stereodescriptor to the following chiral compound

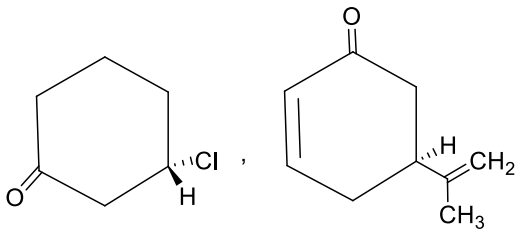


A. R, S
B. S, S
C. R
D. S

20. For an octahedral Cu^{2+} complex depicting axial EPR spectrum (g|| > ⊥g), the geometry of Cu^{2+} and the orbital containing the unpaired electron are, respectively.

A. Tetragonally elongated, dx_2-y_2
B. Tetragonally compressed, dz^2
C. Tetragonally elongated, dz^2
D. Tetragonally compressed, dx^2-y^2

21. Label the chiral carbon in the following compound as R or S



A. (i) S (ii) R
B. (i) S (ii) S
C. (i) R (ii) R
D. (i) R (ii) S

22. The law of mass action was enunciated by

A. Van't Hoff's
B. Bodenstein
C. Guldberg and Waage
D. Berthelot

23. The complexometric titration curve which is usually a plot of

A. pM = -log $[M]^{1/2}$
B. pM= -log [M]
C. pM= log $[M]^{1/2}$
D. pM= log [M]

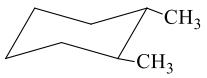
24. When NaOH solution is gradually added to HCl solution in a beaker, the conductivity of the beaker solution

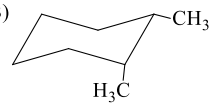
A. Continuously increases
B. Continuously decreases
C. Remains constant
D. First decreases and at the equivalence point sharply increases

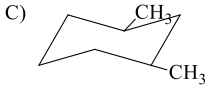
25. Which chromatography is employed for the purification of H_2O

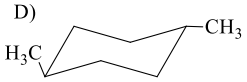
A. Thin-layer chromatography
B. Ion exchange chromatography
C. Gas chromatography
D. Paper chromatography

26. Which one of the following is a cis compound

A) 

B) 

C) 

D) 

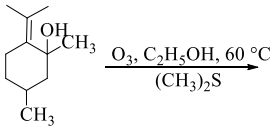
27. Spectroscopic ground state term symbols of cobalt ions in $[Co(H_2O)_6]^{2+}$ and $[CoCl_4]^{2-}$, respectively, are

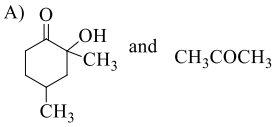
A. ^2T_1g and $^4A_2$
B. ^4T_1g and $^4A_2$
C. ^4T_2g and $^4T_1$
D. $^2T_1$ and $^4A_1$

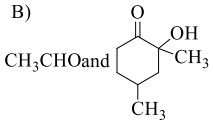
28. Which of the following is used as an adsorbent material in a thin layer chromatography?

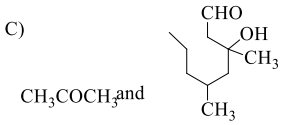
A. Silica gel
B. Alumina
C. Cellulose
D. All

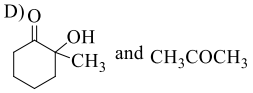
29. What will be product in the following reaction?



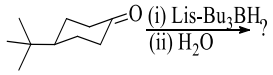
A) 

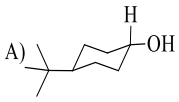
B) 

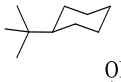
C) 

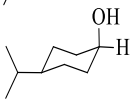
D) 

30. For what type of reactions, the collision theory is satisfactory
    A. Zero order
    B. Unimolecular
    C. Bimolecular
    D. Any order
31. The O_2 coordinated to metal ion centres in oxy-myoglobin and oxy-hemocyanin exists, respectively, as
    A. superoxide and peroxide
    B. superoxide and superoxide
    C. peroxide and peroxide
    D. superoxide and oxygen
32. Find the major product of the following reaction,



A) 

B) 

C) 

D) None of the above

33. Open Gel permeation chromatography instrument consist of a column, the column packing are exchange resins of weak acids
    A. Alumina
    B. Silica
    C. Diethyl amino ethyl
    D. None of the above
34. The reaction of equimolar quantities of $Fe(CO)_5$ and OH^- gives a complex species X which on further reaction with MnO_2 gives species Y. X and Y, respectively, are
    i. $[Fe(CO)_5(OH)]^-$ and $Fe_2(CO)_9$
    ii. $[Fe(CO)_4]_2^-$ and $Mn_2(CO)10$
    iii. $[HFe(CO)_4]^-$ and Fe_2O_3
    iv. $[HFe(CO)_4]^-$ and $Fe_3(CO)_{12}$
35. A molecule returns from the excited singlet state to the ground singlet state with emission of light, the process is known as
    A. Fluorescence
    B. Phosphorescence
    C. Chemiluminescence
    D. Scattering

Biotechnology

Part – B **[35x1=35]**

1. Identify the enzyme that does not take part in the process of galactose metabolism.

A. Galactokinase
B. Glucokinase
C. Galactose-1-Phosphate Uridyltransferase
D. UDP-Galactose 4- epimerase

2. Which enzyme's deficiency leads to a glycogen storage disease known as Tarui's disease?
A. Glucokinase
B. Pyruvate Kinase
C. Phosphofructokinase
D. Phosphoglucomutase

3. The process by which protein synthesis from genetic code occurs is best described by
A. Transcription
B. Translation
C. replication
D. Reproduction

4. In translation, this is not an essential component
A. Amino acid
B. Ligase
C. mRNA
D. Anticodon

5. Protein synthesis corresponds to the process of
A. Duplicating required DNA for synthesis of proteins
B. Formation of amino acids from mRNA
C. formation of mRNA from DNA template
D. Formation of amino acids from DNA template directly

6. Which of the following is produced with the combination of apoenzyme and coenzyme:
A. Holoenzyme
B. Enzyme substrate complex
C. Prosthetic group
D. Enzyme product complex

7. In pour-plate method, the medium should be maintained at what temperature?
A. 37 degree C
B. 67 degree C
C. 45 degree C
D. 0 degree C

8. Ammonia oxidizers and nitrite oxidizers are _____
   A. Gram-negative chemolithotrophs
   B. Gram-positive chemolithotrophs
   C. Gram-negative photolithotrophs
   D. Gram-positive photolithotrophs

9. Which among the following is not an ammonia-oxidizing bacteria?
   A. Nitrosomonas europaea
   B. Nitrosovibrio tenuis
   C. Nitrospina gracilis
   D. Nitrosococcus oceanus

10. Agrobacterium is involved in which of the following processes?
   A. Ammonification
   B. Nitrification
   C. Reduction of nitrate to ammonia
   D. Denitrification

11. Which of the following method is used for enumeration of bacteria in vaccines and cultures?
   A. Microscopic Count
   B. Membrane filter
   C. Plate count
   D. Dry weight determination

12. Interferons are
   A. Antibiotic proteins
   B. Antiviral proteins
   C. Antigen proteins
   D. All of the above

13. Globulins of the blood plasma are responsible for
   A. Defence mechanisms
   B. Blood clotting
   C. Oxygen transport
   D. Osmotic balance

14. Beta-oxidation of fatty acids occurs in
   A. Peroxisome
   B. Peroxisome and Mitochondria
   C. Mitochondria
   D. Peroxisome, Mitochindria and ER

15. Identify the purine base of nucleic acids in the following.
   A. Cytosine
   B. Thymine
   C. Uracil
   D. Adenine

16. What is the reducing agent used in the fatty acid synthesis pathway?
    A. FAD+
    B. FADH2
    C. NAD+
    D. NADH

17. This hormone is responsible for "fight-or-flight" response
    A. Thyroxine and melatonin
    B. Insulin and glucagon
    C. Epinephrine and norepinephrine
    D. Oestrogen and progesterone

18. This is the most abundant hormone produced by the anterior pituitary
    A. LH
    B. TSH
    C. ACTH
    D. GH

19. Which of the following is an example of Epimers?
    A. Glucose and Ribose
    B. Glucose and Galactose
    C. Galactose, Mannose and Glucose
    D. Glucose, Ribose and Mannose

20. How many Total Molecules of ATP are Synthesized from ADP via Glycolysis of a Single Molecule
of Glucose?
    A. 36
    B. 38
    C. 2
    D. 4

21. An exception to Mendel's law is
    A. Linkage
    B. Independent assortment
    C. Purity of gametes
    D. Dominance

22. Cystic fibrosis is
    A. Autosomal dominant disorder
    B. Sex-linked recessive disorder
    C. Sex-linked dominant disorder
    D. Autosomal recessive disorder

23. Which of the following is a technique used to analyze DNA fragments for genetic testing or forensic identification?
   A. Polymerase chain reaction (PCR)
   B. Gel electrophoresis
   C. Western blotting
   D. Southern blotting

24. What is the probability of two heterozygous parents having a homozygous recessive offspring?
   A. 0%
   B. 25%
   C. 50%
   D. 75%

25. What is the term for the process by which segments of DNA are exchanged between homologous chromosomes during meiosis?
   A. Crossing over
   B. Mutation
   C. Replication
   D. Transcription

26. Which of the following genetic disorders is caused by the absence of an X chromosome in females?
   A. Down syndrome
   B. Turner syndrome
   C. Klinefelter syndrome
   D. Cystic fibrosis

27. What is the primary function of tRNA during translation?
   A. Carries amino acids to the ribosome
   B. Transcribes mRNA into protein
   C. Provides structural support to the ribosome
   D. Catalyzes peptide bond formation

28. What is the role of ribosomes in translation?
   A. Synthesize mRNA
   B. Carry out splicing of pre-mRNA
   C. Form peptide bonds between amino acids
   D. Act as a template for DNA replication

29. What is the process called when pre-mRNA is modified by adding a 5' cap and a poly(A) tail before it leaves the nucleus?
   A. Splicing
   B. Transcription
   C. Post-transcriptional modification

D. Translation

30. Which of the following is NOT a step in the initiation of translation?
A. Binding of mRNA to the small ribosomal subunit
B. Recognition of the start codon by the initiator tRNA
C. Formation of a peptide bond between the first two amino acids
D. Assembly of the large ribosomal subunit

31. DNA precipitation out of a mixture of biomolecules can be achieved by treatment with
A. Chilled chloroform
B. Methanol at room temperature
C. Chilled ethanol
D. Isopropanol

32. Which of the following is NOT a type of mutation?
A. Substitution
B. Insertion
C. Deletion
D. Duplication

33. What is the role of ligase in DNA replication?
A. Unwinds the DNA double helix
B. Joins Okazaki fragments on the lagging strand
C. Synthesizes new DNA strands
D. Initiates DNA replication

34. What is the function of polymerase chain reaction (PCR) in molecular biology?
A. Amplifies a specific region of DNA
B. Cuts DNA at specific recognition sequences
C. Inserts foreign DNA into a host organism
D. Transcribes RNA into DNA

35. What is the primary function of RNA interference (RNAi) in molecular biology?
A. To inhibit gene expression by degrading mRNA molecules
B. To enhance gene expression by stabilizing mRNA molecules
C. To promote DNA replication
D. To repair damaged DNA

Microbiology

Part – B **[35x1=35]**

1. The medium used for the production of monoclonal antibodies are
   A. MEM medium
   B. Mac Conkey medium
   C. RPM medium
   D. HATmedium

2. Father of Microbiology
   A. Louis Pasteur
   B. RobertKoch
   C. Leewenhoek
   D. PaulEhrlich

3. Salk vaccine is based on
   A. Increase in virulence
   B. Reduction in virulence
   C. Reduction in antigenicity
   D. Killing or Inactivation of the organism
4. HIV is a
   A. ss DNA virus
   B. ss RNA virus
   C. dsDNA virus
   D. ds RNA virus
5. Pox virus belongs to Baltimore classification
   A. Class I
   B. Class II
   C. Class III
   D. Class IV

6. Naked self replicating infectious viral agents without protein coding sequences
   A. virion
   B. viroid
   C. virusoid
   D. satellite virus
7. Gradual change in antigenic structure of influenza spikes is called –
   A. antigenic shift
   B. antigenic drift
   C. transduction
   D. transfection

8. Agar is used for solidifying culture media because
   A. it enhances the growth of bacteria
   B. it does not add to the nutritive properties of the medium
   C. the melting and solidifying points of agar solution are the same
   D. it adds to the nutritive properties of the medium

9. Supports the growth of fastidious organisms
   A. Minimal Media
   B. Basal media
   C. Blood agar media
   D. Potato Dextrose agar media

10. Nichrome loop wire is used in which of the following techniques?
   A. Pour-plate
   B. Streak-plate
   C. Spread-plate
   D. Roll-tube technique

11. Scientific name for Tsetse fly
   A. Musca spp.
   B. Glossina spp.
   C. Anopheles spp.
   D. Culex spp.

12. The Plasmodium life cycle in mosquito is called
   A. Schizogony
   B. Pre-erythrocytic cycle
   C. Sporogony
   D. Exo-erythrocytic cycle

13. Excystation of amoebic cysts occurs in
   A. Small intestine
   B. Rectum
   C. Large intestine
   D. Stomach

14. To bring down allergic manifestations the following is used
   A. Di-methyl phthalate
   B. Epinephrines
   C. Di-ethyl carbarazine
   D. Analgesics

15. The pre-erythrocytic Plasmodium cycle occurs in

    A. Liver cells
    B. Brain cells
    C. Red blood cells
    D. Bone cells

16. The second intermediate host of Schistosomes are

    A. Vegetation
    B. Crabs
    C. Cray fishes
    D. Snails

17. Scientific name of sandfly is_____.

    A. Drosophila
    B. Ancyclostoma
    C. Musca
    D. Phlebotomus

18. Black water fever is the special manifestation of malaria caused by

    A. Plasmodium falciparum
    B. Plasmodium malariae
    C. Plasmodium ovale
    D. Plasmodium vivax

19. Malabsorbtion syndrome in children is caused by

    A. Giardia lamblia
    B. Entamoeba coli
    C. Entamoeba histolytica
    D. Balantidium coli

20. Reduvid bugs transmit

    A. African Trypanosomiasis
    B. American Trypanosomiasis
    C. Schistosomiasis
    D. Surra

21. Leptomonas stage of blood and tissue flagellates are

    A. Amastigot
    B. Promastigote
    C. Epimastigote
    D. Trypomastigote

22. Maurer's cleft is a characteristic feature of
    A. P. falciparum
    B. P. malariae
    C. P. vivax
    D. P. ovale

23. Smallest unit of viral protein coat
    A. Capsid
    B. Capsomers
    C. Protomers
    D. Hexagon and Pentagon

24. The Exit of virus from the host is called
    A. Egress
    B. Adsorption
    C. Viropexis
    D. Transformation

25. Another name of viral matrix
    A. Capsid
    B. Spikes
    C. Envelope
    D. Tegument

26. Edward Jenner for immunization used
    A. Small pox lesion
    B. Vaccinia lesion
    C. Chicken pox lesion
    D. Cowpox lesion

27. The term virus was coined by
    A. Edward Jenner
    B. Martin Beijerink
    C. Dimitry Iwanowsky
    D. Adolf Mayer

28. Double stranded DNA Genome without envelop
    A. Adeno virus
    B. Herpes virus
    C. Pox virus
    D. Papova virus

29. Viruses cannot infect
    A. Enterocytes
    B. Gangliocytes
    C. Hepatocytes
    D. Erythrocytes
30. For microbiological examination of coliform bacteria in foods the preferable media is
    A. MacConkey broth
    B. Eosine Methylene blue agar
    C. Violet Red bile agar
    D. all of these

31. Which of the following factor of food is considered as intrinsic factor from food safety point of view
    A. Water activity (aw)
    B. Temperature
    C. Relative humidity
    D. Vapour pressure
32. Which is not fruit or vegetable based fermented products
    A. Wine
    B. Vinegar
    C. Beer
    D. Sauerkraut
33. The method in which the cells are frozen dehydrated is called
    A. Pasteurization
    B. Desiccation
    C. Disinfection
    D. Lyophilisation
34. Hanging drop method for motility study was first introduced by
    A. Robert Koch
    B. Jenner
    C. Louis Pasteur
    D. Leeuwenhock
35. Fruiting body of *Aspergillus* is called
    A. Apothecium
    B. Perithecium
    C. Cleistothecium
    D. Hypanthodium

Biochemistry

Part – B [35x1=35]

1. The nitrogen base absent in DNA
   A. Adenine
   B. Cytosine
   C. Guanine
   D. uracil

2. Capacitation mainly takes place in
   A. Fallopian tube
   B. Cervix
   C. vagina
   D. uterus

3. Anaplerotic enzyme of TCA cycle
   E. Pyruvate carboxylase
   F. Hexokinase
   G. Malate degydrogense
   H. Cis-aconitase

4.Enzyme involved in the hydrolyses of sucrose
   a. Lipase
   b. Amylase
   c. protease
   d. Invertase

5. Maltose on hydrolysis produces
   a. Glucose only
   b. Glucose and Galactose
   c. Glucose and arabinose
   d. Glucose and fructose

6. Starch is
   a. Disaccharide
   b. Homo Polysaccharide
   c. Trisaccharide
   d. Hetero Polysaccharide

7. ATP yield in the β-oxidation of palmitic acid
   a. 139
   b. 149
   c. 129
   d. 119

8. The major lipid in adipose tissue
    a. Phospholipids
    b. Sphingolipids
    c. Triglycerides
    d. Cholesterol

9. Plasmalogen is a
    a. Lipid
    b. protein
    c. Coenzyme
    d. Aminoacid

10. Biotin is essential for
    a. Dehydration
    b. Carboxylation
    c. Phosphorylation
    d. Epimerisation

11. Rotheras test is used for the detection of
    a. Ketones
    b. Glucose
    c. Aminoacids
    d. Nitrogen bases

12. Bacteriophages are
    a. bacteria that attack virus
    b. Viruses that attack bacteria
    c. Free living virus
    d. all of these

13. Iodine number is used for the detection of
    a. Aminoacids
    b. Carbohydrates
    c. Degree of unsaturation in oil
    d. Nucleic acids

14. The sequence of reactions in PCR
    a. Annealing- Amplification- Denaturation
    b. Annealing-Denaturation –Amplification
    c. Denaturation –Annealing- Amplification
    d. None

15. Watson-Crick model of ds DNA is
    a. Right handed antiparallel
    b. Left handed antiparallel
    c. Right handed parallel
    d. Left handed parallel

16. Reverse Transcription is the synthesis of
    a. CDNA
    b. DNA
    c. mRNA
    d. rRNA

17. Protein is purified using ammonium sulfate by
    a. Ion exchange chromatography
    b. Salting Out
    c. Affinity chromatography
    d. Ion exchange chromatography

18. Keratin
    a. Protein
    b. Bicarbonate
    c. Lithium
    d. oligonucleotide

19. The bond which breaks during replication
    a. Glycosidic bond
    b. Phosphodiester bonds
    c. Phospahte bonds
    d. Hydrogen bonds

20. Dietary fibre contains
    a. Pectin
    b. Starch
    c. cholesterol
    d. collagen

21. Scruvy is caused due to the deficiency of
    a. Vitamin B1
    b. Phenyl alanine
    c. Vitamin C
    d. Folic acid

22. Which of the following protein structureis not disrupted during denaturation
    a. Secondary
    b. Primary
    c. Tertiary
    d. Quaternary

23. Capping is characteristic feature of
    a. Protein
    b. DNA
    c. mRNA
    d. Lipids

24. Which of the following is a stop codon
    a. UAA
    b. AUA
    c. AUG
    d. UGC

25. Which of the enzyme helps in the penetration of ovum ?
    a. Amylase
    b. Hyaluronidase
    c. Transpeptidase
    d. Lipase

26. Protein not containing heme moiety
    a. Myoglobin
    b. Albumin
    c. Hemoglobin
    d. Cytochrome C

27. Function of Golgi apparatus
    a. Fatty acid synthesis
    b. Replication
    c. Transcription
    d. Sorting and protein packaging

28. Basic aminoacid
    a. Glycine
    b. Serine
    c. c)Arginine
    d. Methionine

29. Endopeptidase
    a. Carboxy peptidase
    b. Trypsin
    c. Laccase
    d. Lipase

30. Bile acids are produced from
    a. Protein
    b. Aminoacids
    c. Cholesterol
    d. Nitrogen bases

31. Reverse transcription is catalysed by
    a. DNA polymerase
    b. RNA polymerase
    c. Reverse transcriptase
    d. Restriction endonuclease

32. Sugar components of sucrose
    a. Glucose only
    b. Glucose and Fructose
    c. Fructose and Galactose
    d. Fructose and Ribose

33. Which of the following is Hetero polysccharide?
    a. Cellulose
    b. Heparin
    c. Glycogen
    d. Chitin

34. Lipoprotein is
    a. HDL
    b. oleic acid
    c. Linoleic acid
    d. Stearic acid

35. Which of the following is Transversion
    A. Purine - purine
    B. Pyramidine-Pyramidine
    C. Purine - Pyramidine
    D. All the above

Mathematics

Part – B [35x1=35]

1.The number of conjugates of a in a cyclic group of order n is _____.

A. 4
B. $n - 1$
C. 1
D. p(n)

2. The number of conjugate classes of symmetric group S_4 is _____.

A. 4
B. 4!
C. 5
D. 12.

3. In any abelian group of order n , the number of conjugates of a given element a is _____.
   A. n
   B. n - 1
   C. 2
   D. 1
4. The number of conjugate classes of symmetric group S_5 is _____.
   A. 6
   B. 7
   C. 5
   D. 32.
5. The number of elements conjugate to an element a of a finite group G is _____.
   A. O(G)
   B. O(G) / 2
   C. O(N(a))
   D. Index of N(a)
6. The equation $x'' + a(t)x = 0,\ t \geq 0$ is _____.
   A. Oscillatory if a(t)=-1
   B. Non-oscillatory if a(t)=1
   C. Oscillatory and non-oscillatory if a(t)=0
   D. Oscillatory if a(t)=1
7. The equation $x'' + k/t^2\, x = 0$ has many zeros, if _____.
   A. $k = 1/4$
   B. $k < 1/4$
   C. $k > 1/4$
   D. k = 2
8. The equation $x'' - x = 0,\ t \geq 0$ is _____.
   A. Oscillatory
   B. Non- Oscillatory
   C. Oscillatory & Non-Oscillatory
   D. Constrains

9. The sufficient condition for oscillations of the equation $x'' + a(t)x = 0$ where a(t) is continuous f(t) exists for each t, is that $\liminf_{t\to\infty} tf(t)$ is _____.

   A. equal to 1
   B. greater than $\frac{1}{4}$
   C. less than $\frac{1}{4}$
   D. equal to 2

10. Two solutions of IVP $x' = 8x^{\frac{7}{8}}$, $x(0) = 0$ are _____.

   A. $0, t^8$
   B. $1, t^8$
   C. $0, t^7$
   D. $1, t^7$

11. A set is said to be infinite if it is _____.

   A. Finite
   B. Countable
   C. Not finite
   D. Continuous

12. Given a collection A of disjoint non – empty sets, there exists a set C consisting of exactly one element from each element of A is called _____.

   A. Axiom of first countable
   B. Axiom of choice
   C. Axiom second countable
   D. Axiom of third countable

13. A set 'A' with an order relation '<' is said to be well-ordered if every non-empty subset of A has a _____.

   A. Smallest element
   B. Biggest element
   C. {1}
   D. { 2 }

14. In a strictly partially ordered set A if every simply ordered subset has an upper bound in A, then A has a maximal element is _____.
    A. Maximum principle
    B. Well – ordering theorem
    C. Zorn's Lemma
    D. Moreras theorem

15. The number of coordinates minus the number of independent equations of constraint is equal to _____.
    A. Degree
    B. The no of degrees of freedom
    C. constrained
    D. unilateral

16. A system whose constraints equations are of the holonomic form is called a _____.
    A. Holonomic system
    B. Non holonomic system
    C. scleronomic
    D. rhenomic

17. In a convergent product the general factor p_n tends to _____.
    A. 0
    B. 1
    C. 2
    D. 3

18. A function which is analytic in the whole plane is said to be an _____.
    A. entire function
    B. meromorphic function
    C. harmonic function
    D. analytic function

19. If z = a is an Isolated singularity of f(z) then the singularity is called _____.
    A. essential
    B. Removable
    C. zero of f(z)
    D. isolated essential

20. A function f(z) which is analytic in a region Ω , except for poles is said to be _____.
    A. Singular in Ω
    B. Regular in Ω
    C. meromorphic in Ω
    D. singular in Ω

21. Let X be a finite dimensional normed space. Which of the following is false?
    A. strong convergence =⇒ weak convergence
    B. weak convergence =⇒ strong convergence
    C. weak convergence ; strong convergence
    D. strong convergence ⇐⇒ weak convergence

22. Which of the following statement is false?
    A. If X is reflexive, then it is complete.
    B. If X is complete, then it is reflexive.
    C. Every Hilbert space is reflexive.
    D. Every finite dimensional normed space is reflexive.

23. Let X and Y be normed spaces and {Tn} be a strongly operator convergent sequence in B(X, Y) with limit T. Find the statement which is not always true?
    A. $||Tn - T|| \to 0$
    B. $||Tnx - T\,x|| \to 0, \forall x \in X$
    C. $|f(Tnx) - f(T\,x)| \to 0, \forall x \in X$ and $\forall f \in Y\ 0$
    D. $||f(Tnx) - f(T\,x)|| \to 0, \forall x \in X$ and $\forall f \in Y\ 0$

24. Let P1 and P2 be projections on a Hilbert space H and let Y1 = P1(H) and Y2 = P2(H). If the difference P = P2 – P1 is a projection, P projects H onto _____.
    A. $Y2 \cap Y \perp 1$
    B. $Y1 \cap Y2$
    C. $Y1 \oplus Y2$
    D. $Y1 \cup Y2$

25. Let P be a projection on a Hilbert space H and let Y = P(H). Which one of the following is false?

A. Y ⊥ is the null space of P

B. I – P also projects H onto Y

C. P|Y is the identity operator on Y

D. Y is a closed subspace of H

26. A set function is a function which associates the following to each set in some collection of sets _____.

A. real number

B. extended real number

C. imaginary number

D. complex number

27. If E is a measurable set, the Lebesgue measure mE is defined as _____.

A. 0

B. φ

C. x+E

D. m∗E

28. The characteristic function χA of any set A satisfies for x∈/ A, the condition χA(x) is _____.

A. ∞

B. 0

C. 1

D. A

29. The difference of the end points of an interval I is defined as _____.

A. l(I)

B. I

C. m∗I

D. m∗I

30. m∗φ, where φ is an empty set, equals _____.

A. φ

B. 1

C. 0

D. Φ

31. By Newton's method the root of x3 – 2x + 1 = 0 the first decimal place is _____.
    A. 0.5
    B. 0.4
    C. 0.6
    D. 0.7

32. In relaxation method, the values of the residual must be reduced to _____.
    A. constant
    B. zero
    C. close to 0 as possible
    D. one

33. Requlars Falsi Method may give falsi root if f(x) is _____.
    A. Discontinuous at [x1, x2]
    B. Continuous at [x1, x2]
    C. f(x) is a decreasing function
    D. f(x) is an increasing function

34. Cosider the following statements

    R: The method of linear interpolation is limited to polynomials only

    S: In the regula-falsi method, the rate of convergence is related to the rate of change of slope of the curve.

    Then _____.
    A. both R and S are true
    B. Both R and S are false
    C. R is true and S is false
    D. R is false and S is true

35. Which one of the following methods could determine the roots of a polynomial equation without starting values?
    A. the bisection method
    B. the regula-falsi method
    C. the quotient-difference method
    D. the Newton's method

Clinical Psychology

Part – B **[35x1=35]**

1.According to the behaviourist school, _____ plays no role in learning.
- A. Experience
- B. Nurture
- C. Nature
- D. Punishment

2. Thorndike developed the:
- A. law of effort
- B. law of energy
- C. law of effusion
- D. law of effect

3. A bakery gives customers a free pastry after every 6 pastry purchases. This is an example of what kind of reinforcement schedule?
- A. fixed interval
- B. fixed ratio
- C. variable interval
- D. variable ratio

4. Gerhardt got sick after eating a peach. Now he feels sick when he looks at peaches, nectarines or plums. This illustrates:
- A. spontaneous recovery
- B. intermittent reinforcement
- C. modelling
- D. generalization

5. Anterograde amnesia is typically associated with damage to the:
- A. amygdala
- B. hippocampus
- C. cerebellum
- D. retina

6. Which part of working memory controls how attention is directed?
- A. the central executive
- B. the mother board
- C. the mnemonic processor
- D. the director

7. Our tendency to focus on information that is consistent with our beliefs and to ignore contradictory information is called:
   A. contradiction avoidance
   B. confirmation bias
   C. counterfactual thinking
   D. functional fixedness

8. The Flynn effect refers to the observation that:
   A. scores on intelligence tests have been increasing worldwide for decades
   B. identical twins are more similar intellectually than fraternal twins
   C. learning a second language seems to increase cognitive abilities
   D. language and its structures limit human thought

9. _____ believed in a general intelligence factor.
   A. Sternberg
   B. Spearman
   C. Gardner
   D. Thurstone

10. The facial feedback hypothesis refers to:
   A. the movements of our facial muscles can trigger emotions
   B. we can judge someone else's mood by looking at their face
   C. once we know how we are feeling, we change our facial expression
   D. some people disguise their emotions if they look in a mirror

11. The phenomenon of misattribution of arousal (e.g. thinking you are in love when really you are just scared) is best explained by which theory of emotion?
   A. the James-Lange theory
   B. the two-factor theory
   C. the Cannon-Bard theory
   D. the wishful thinking theory

12. Which of the following is classed as a basic emotion?
   A. Guilt
   B. Shame
   C. Jealousy
   D. Disgust

13. The ability to control one's emotions is known as:
   A. facial feedback
   B. interpersonal intelligence
   C. emotional regulation
   D. emotional contingency

14. According to the James-Lange theory of emotion:
    A. emotional experience and physiological arousal occur at the same time
    B. emotional experience precedes physiological arousal
    C. physiological arousal precedes emotional experience
    D. we cannot experience different emotions

15. The most stressful life event included in the Holmes and Rahe Stress Scale is:
    A. being sent to jail
    B. getting divorced
    C. being fired from work
    D. death of a spouse

16. Which eating disorder is characterized by binge eating followed by purging?
    A. anorexia nervosa
    B. Fasting
    C. bulimia nervosa
    D. 5:2 syndrome

17. Projective tests claim to reveal information about:
    A. career aptitude
    B. unconscious processes
    C. intellectual attainment
    D. parenting style

18. Malingering and Munchausen syndrome are:
    A. somatoform disorders
    B. anxiety disorders
    C. sexual disorders
    D. factitious disorders

19. Frotteurism is:
    A. a type of schizophrenia
    B. an eating disorder
    C. a paraphilia
    D. a somatoform disorder

20. Hallucinations are classed as a _____ symptom of schizophrenia.
    A. Positive
    B. Cognitive
    C. Negative
    D. transitive

21. Improvement that occurs simply because a patient expects to feel better rather than because of the actual treatment is called:
    A. a treatment effect
    B. a placebo effect
    C. an illusory correlation
    D. a Barnum effect

22. Giving alcoholics "Antabuse" to make them feel nauseous if they drink alcohol is an example of:
    A. aversion therapy
    B. exposure therapy
    C. ECT
    D. AAT

23. According to cognitive dissonance theory, we may be motivated to change our attitudes to:
    A. reduce negative feelings
    B. conform to the attitudes of high-status individuals
    C. force others to do the same
    D. increase our level of anxiety

24. Resilience is the ability to _____.
    A. Stay peaceful
    B. Cope up with the problems
    C. Control emotions
    D. Concentrate

25. Mental Imagery is _____.
    A. Hallucinated images
    B. Visual Representation
    C. Auditory hearing
    D. Drawings

26._____ is a type of thinking that helps a person in stepping aside from his own personal beliefs, prejudices and opinions to sort out the faiths and discover the truth, even at the expense of his basic belief system
    A. Critical Thinking
    B. Reflective Thinking
    C. Conceptual thinking
    D. Abstract Thinking

27. _____ is the ability to draw some logical conclusions from known statement or evidences
    A. Inductive reasoning
    B. Deductive reasoning
    C. Abstract reasoning
    D. Reasoning

28. According to Principle of _____, Items that are closed together tend to be grouped in our perceptions
    A. Proximity
    B. Continuity
    C. Closure
    D. Similarity
29. The first formal test of intelligence was devised by
    A. Bhattia
    B. Wechsler
    C. Kaufman
    D. Alfred Binet
30. Information processing theory was developed by
    A. Richard Atkinson and Richard Shiffrin
    B. Margon and King
    C. William Cannon and James Bard
    D. Simmsons and yarmey
31. A clerk who is angry with his boss, but cannot show it for fear of being fired may come home and start banging his wife and children is known as
    A. Sublimation
    B. Displacement
    C. Rationalization
    D. Compensation.
32. A false belief that are maintained even though they clearly are out of touch with reality is
    A. Illusion
    B. Delusion
    C. Hallucination
    D. Distorted perception.
33. Irrational fear of specific objects or situations
    A. Phobia
    B. Anxiety
    C. Panic
    D. Obsessional
34. Which test predict a person's ability in a specific area
    A. Achievement test
    B. Intelligence test
    C. Interest test
    D. Aptitude test
35. Which therapy stresses the "Meaning of life and human freedom"
    A. Humanistic therapy
    B. Existential therapy
    C. Gestalt therapy
    D. Client – centered therapy