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LIST OF SPECIAL PROGRAMMES FOR ADVANCED LEARNERS & SLOW LEARNERS

AY: 2019-2020

LIST OF PROGRAMS FOR ADVANCED LEARNER'S

Entrance for the corresponding programs is based on the merit in the entrance conducted by the authorities. The students identified as Advanced Learners are provided with the following amenities for their further career and professional development.

- Students are encouraged to attend GPAT/ PGECET coaching classes
- To present posters and oral presentations in Seminars/ Conferences/Workshops
- Encouraged to Publish Papers in Journals
- Encouraged to work on the quarterly newsletter, *Sanjivini.*

PRINCIPAL
VIJAYA INSTITUTE
PHARMACEUTICAL SCIENCES FOR WOMEN
ENIKEPADU VIJAYAWADA 521 108

GPAT MOCK TEST

1. The temperature at which vapour pressure of a liquid equals to the atmospheric pressure is known as
A) Melting Point
B) Freezing point
C) Transition Point
D) Boiling Point

2. The Equation which represents the first law of thermodynamics is
A) $E=M+C^2$
B) $M=EC^2$
C) $E=MC$
D) $E=MC^2$

3. In adiabatic system
A) Matter cannot exchange
B) Matter and energy cannot exchange
B) Energy cannot exchange
D) Matter & energy exchange.

4. Calorific value of food stuff is determined by
A) Heat of neutralization
B) Heat of transition
B) Heat of hydration
D) Heat of combustion

5. Hot water in thermal flask is an example for
A) Adiabatic system
B) isolated system
C) open system
D) closed system

6. Automobile engine explained by using _____ law of thermodynamics.
A) First law of thermodynamics
B) Second law of thermodynamics
C) Third law of thermodynamics
D) All

7. Lowering of vapor pressure is determined by
A) Isopiestic method
B) thermoelectric method
C) both
D) none of the above

8. Which one is non- colligative property of solution
A) Lowering of vapor pressure
B) depression of freezing point
C) Elevation of melting point
D) Osmotic pressure

9. Equation for determination of molecular mass from elevation of boiling point

A) $M=\dfrac{1000Kf\ W2b}{W1\Delta Tf}$
B) $M=\dfrac{1000Kf\ W1}{W2\Delta Tf}$
C) $M=\dfrac{1000Kb\ W2}{W1\Delta Tb}$
D) $M=\dfrac{Kf\ W2}{W1\Delta Tb}$

10. Osmosis is a process of
A) Movement of drug from low to high
B) Movement of drug from high to low
C) Equilibrium
D) Diffusion process

11. The colligative property of solution is related to the.
A) Number of particles
B) pH
C) Number of ions
D) Number of ingredients

12. The temperature at which vapour pressure of a liquid equals to the atmospheric pressure is known as
A) Melting Point
B) Freezing point
C) Transition Point
D) Boiling Point

13.Which one shows HYDROLYSIS decomposition
A) Aspirin   B) Amoxicillin   C) Atropine   D) All

14.Example of constitutive property is
A) Optical rotation   B) Boiling point
C) Molecular weight   D) None of the above

15.What is the example of intensive property
A) Temperature   B) Pressure   C) Mass   D) A&B

16.Relationship between dielectric constant and refractive index
A) $\epsilon = \eta\infty2$ B) $\infty = \eta\epsilon2$ C) $\eta = \epsilon\infty2$ D) $n = \eta\infty$

17.Refractive index of water is _____
A) 1.3233   B) 1.3325   C) 1.2235   D) 1.332

18.The symbol $[\eta]_D^{20}$ indicates
A) Refractive index at 20 ºC & 589 nm   B) Refractive index at 20 ºC & 859 nm
C) Molar refraction at 20 ºC & 589 nm   D) Molar refraction at 20 ºC & 589 nm

19.First order reaction rate constant
A) K = 2.303/t Log C/Co   B) K = Ao – A/t
C) K = 2.303/C Log T /C   D) K = 2.303/t Log Co/C

20.Which one shows polymorphic decomposition
A) Nifedipine   B) Dextron   C) Sodium bicarbonate   D) Copper

21.Which one shows photolysis decomposition
A) Nifedipine   B) Dextron   C) Furosemide   D) A & C

22.The temperature at which vapour pressure of a liquid equals to the atmospheric pressure is known as
A) Melting Point   B) Freezing point
C) Transition Point   D) Boiling Point

23.Refractive index of CCL₄ is _____
A) 1.4969   B) 1.4603   C) 1.6176   D) 1.3322

24.The equation which represents second law of thermodynamic
A) $\Delta S_{univ} = \Delta S_{sys} + \Delta S_{surr}$ B) $\Delta S_{sys} = \Delta S_{univ} - \Delta S_{surr}$
C) $\Delta S_{surr} = \Delta S_{univ} - \Delta S_{sys}$ D) All the above

25.Molar refraction is an
A) Constitutive property Liquid   B) Additive property Liquid
C) A & B   D) Constitutive & Additive property Solid

26.Pseudo zero order means
A) Original Second order but behaves as zero order
B) Original First order but behaves as zero order Decreases
C) Original Second order but behaves as first order
D) Original zero order but behaves as first order

27. $H_2 + I_2 \longrightarrow 2$ HI, Molecularity of this reaction

A) 1   B) 2.1   C) 1.2   D) 2

28. In Isochoric process of Thermodynamics......is constant

A) Pressure   B) Temperature
C) Energy   D) Volume

29. Latent heat of vaporization is taken up when

A) Vapors condenses to liquids   B) Liquid vaporizes
C) Vapour solidifies   D) None of the above

30. Automobile engine explained by using _____ law of thermodynamics.

A) First law of thermodynamics   B) Second law of thermodynamics
C) Third law of thermodynamics   D) All

31. On cancellation of manufacturing license, the loan license is

A) Cancelled   B) suspended   C) temporarily suspended   D) None of these

32. Biologicals are tested at

A) Mumbai   B) Kolkata   C) Chennai   D) Kasauli

33. The fourth edition of Indian Pharmacopoeia was published in the year

A)   1966   B) 1985   C) 1996   D) 2000

34. Spurious drugs means

A)   Imitations   B) Substitutes   C) Similar drugs   D) All of the above

35. Every year the register of state pharmacy council is required to print the registers

A)1st January   B) 1st March   C) 1st April   D) 1st June

36. Atropine biosynthesis involves a pair of precursors. Identify the correct pair

A) Ornithine and phenylalanine   B)Tyrosine and tryptophan
C) Tryptophan and dopamine   D) Tyrosine and dopamine

37. The following are the characteristic properties of saponins

P. Saponins give precipitate by shaking with water
Q. Saponins are diterpenes and give form on shaking with water
R. Saponins of triterpenoid compounds and cause haemolysis of erythrocytes
S. They are steroid or triterpenoid compounds with tendency to reduce surface tension of water.
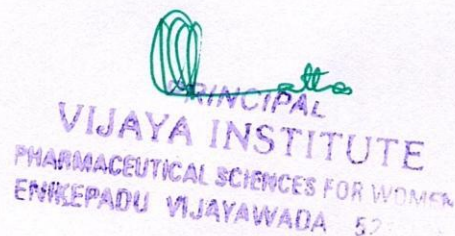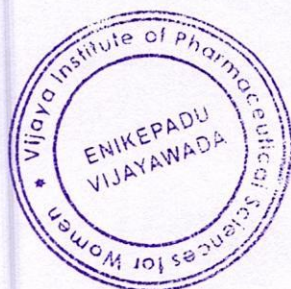Choose the correct option

A) All are correct   B) Only Q and R correct
C) R and S correct   D) Only P and Q correct

38. The following alkaloid is derived from lysine

A)Emitine   B) Chelidone   C) Lobeline   D) None

39. Ergot gives blue colour with

A) Para dimethyl amino benzaldehyde   B) Ortho dimethyl amino benzaldehyde
C) Both of the above   D) None of the above

40.Chhota Chand a synonym for
A) *Rauwolfia serpentine*
B) *Rauwolfia densiflora*
C) *Withaniasomnifera*
D) None of the above

41. How can we detect the rhizomes from the root of *Rauwolfia*
A) By the presence of small Central pith
B) By the presence of vascular bundle
C) By the absence of small Central pith
D) None of the above

42. Isoquinoline alkaloids are biosynthesized via pathway
A) Shikmic acid - tyrosine
B) Shikmic acid- tryptophan
C) Shikmic acid- phenyl alanine
D) None of the above

43. Vincristine and vinblastine act by
A) Interfering with synthesis of t-RNA
B) Inhibiting the fragmentation of DNA
C) Binding of protein
D) Incorporating into Folic acid metabolism

44. Lycopodium spore Method can be used to find out the percentage purity of crude drug which contains
A) Multilayered cells or tissues
B) Well defined particles can be counted
C) Oil globules
D) Characteristic particles of irregular thickness

45. In Liebermann-Burchard test for steroids, the compound is dissolved in
A) Methanol
B) Chloroform
C) Benzene
D) Ethan

46. Ephedra sinica and Ephedra equisetina can be distinguished by the type of
A) Branching
B) Stomata
C) Scaly leaves
D) Alkaloids

47. Eugenol is Chief chemical constituent of
A) Eucalyptus
B) Clove
C) Cardamom
D) Capsicum

48. Morphine, Codeine and thebaine are present in
A) Gelatin
B) Kurchi
C) Opium
D) None

49. Sterols belong to the class of
A) Carbohydrates
B) Lipids
C) Waxes
D) Proteins

50. One among the following is a communicable disease
A) Cancer
B) Diabetics.
C) Hypertension
D) Filariasis

51. Tuberculosis is diagnosed by
A) Widal test
B) Eliza test
C) Mantoux test
D) None

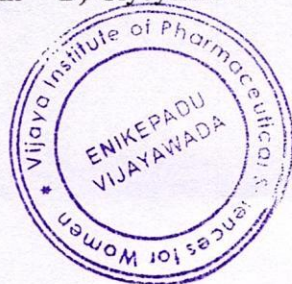**52. Seeds of the following plant contain a complex secondary metabolite known as azadirachtin**
A) Dioscorea
B) Neem
C) Palm
D) Cassia

53. Turmeric, Ginger,Podophyllum and Valerian can be morphologically group as
A) Roots
B) Tubers
C) Rhizomes
D) Fruits

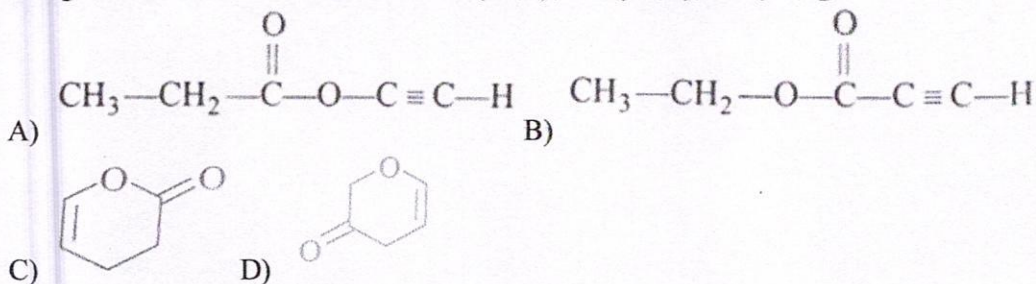**54. Following is intensively sweet plant metabolite**
A) Artemisinin
B) Glycyrrhizin
C) Forskolin
D) Gugguli

55. *Catharanthus roseus* is the main source for the of following alkaloids

A) Vincristine and vinblastine B) Quinine and extraction cinchonine

C) Strychnine and bromine D) None of the above

56. Which of the following drug is not an alkaloid

A) Opium B)Tea C) Vasaka D) Dioscorea

57. Liquorice belongs to the family

A) Liliaceae B) Apocynaceae C) Loganaceae D) Leguminosae

58. Which of the following drug is not from apocynaceae family

A) *Nux vomica* B)*Vinca* C) *Rauwolfia* D) *Strophanthus*

59. Thalleoquin test is used for the identification of

A) Cinchona B) Strychnine C) Datura D) Rhubarb

60. Which of the following alkaloids is liquid in nature

A) Quinine B) Berberine C) Nicotine D) Ornithine

61. Which of the following statement is false for mass spectroscopy?

A) Mass spectroscopy is used to identify unknown compounds within a sample, and to elucidate the structure and chemical properties of different molecules

B) Particle are characterized by their mass to charge ratios (m/z) and relative abundances

C) This technique basically studies the effect of ionizing energy on molecules

D) This technique can be used on all state of matter.

62. Which of the following main component of mass spectroscopy deal with resolving the ions into their characteristics mass components according to their mass-to-charge ratio?

A) Ion Source B) Analyzer C) Detector System D)Analyzer tube

63. Who discovered the mass spectrometer?

A) Francis Aston B) J. J Thomson C) Ernest O. Lawrence D)Walter Kaufman

64. In which state of matter mass spectroscopy is being performed?

A) Solid B)Liquid C) Gaseous D) Plasma

65. A PMR spectrometer operates at 300 MHz. Find the value of magnetic field.

Given: $g_N = 5.585$ and $B_N = 5.05 \times 10^{-27}$ JT^{-1}.

A) 7.05 T B) 6.38 T C) 7.58 T D) 5.93 T

66. What are the main criteria on which mass spectrometer used for?

A) Composition in sample B) Relative mass of atoms

C) Concentration of elements in the sample D) Properties of sample

67. Which species of the following is used to bombard with the sample for which mass spectroscopy has been performed?

A) Alpha particles B) Neutrons C) Electrons D) Protons

68. An organic compound Q exhibited the following spectral data obtained by mass spectroscopy.

IR: 1760 cm^{-1}, ^{1}HNMR: chemical reference (ppm): 7.2 (IH, d, 16.0 Hz), 5.1 (IH, m), 2.1 (3H, s), 1.8 (3H, d, J = 7.0 Hz)^{13}CNMR chemical reference (ppm): 170 (carbonyl carbon). What is compound Q?
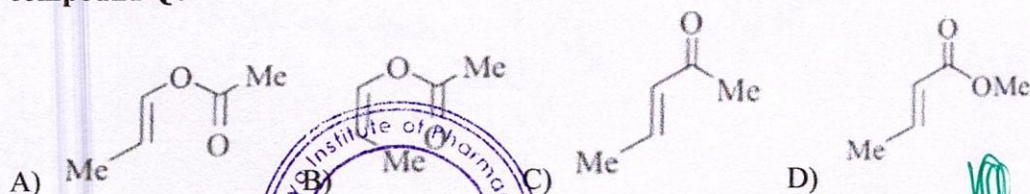
69. The spectrum of a compound with molecular formula $C_5H_6O_2$ is shown below. IR spectrum shows medium intensity band at 3270 and 2180 cm^{-1}. What will be the structure of compound? Chemical reference: 1.3 (^{3}H, t); 2.8 (^{1}H, s), 4.3 (^{2}H, q).

A) $CH_3-CH_2-\overset{\overset{\displaystyle O}{\|}}{C}-O-C\equiv C-H$

B) $CH_3-CH_2-O-\overset{\overset{\displaystyle O}{\|}}{C}-C\equiv C-H$

C) D)

70. Separation of ions in mass spectrometer takes place on the basis of which of the following?
A) Mass   B) Charge   C) Molecular weight   D) Mass to charge ratio

71. Which type of ionic species are allowed to pass through the slit and reach the collecting plate?
A) Negative ions of all masses   B)Positive ions of the specific mass
C) Negative ions of the specific mass   D)Positive ions of all masses

72. In NMR spectroscopy, what is the product of Nuclear 'g' factor (g$_N$), the nuclear magneton and the magnetic field strength (Bo)?
A) Energy of transition from alpha to beta state   B)Chemical shift
C) Spin-spin coupling constant   D) Magnetogyric ratio

73. An organic compound having the molecular formulae $C_{10}H_{14}$ exhibited two singlets in the ^{1}H NMR spectrum and three signals in the ^{13}C NMR. What is the compound?

A)   B)   C)   D)
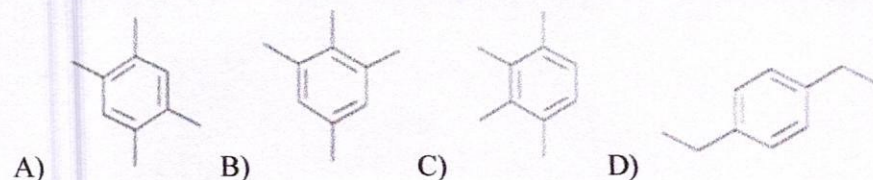
74. The ^{1}H NMR spectrum of a dilute solution of a mixture of acetone and dichloromethane in CDCl$_3$ exhibits two singlets of 1:1 intensity. What will be the molar ratio of acetone to dichloromethane in the solution?
A) 3:1   B) 1:3   C) 1:1   D) 1:2

75. What will be the strength of coupling between geminal protons in the following molecules?
A)Decrease as the size of ring increase   B) Increase as the size of ring increase
C) Remains same   D) No relation between the size of the ring & coupling

76. What is the value of gyromagnetic ratio of proton?
A) 41.10 radian/Tesla   B) 42.57 MHz/Tesla   C) 26.75 radian/Tesla   D) 41.10 MHz/Tesla

77. What are the number of signals in ^{1}H NMR in the given molecules?
A) 3, 4, 4, 3 respectively   B) 2, 6, 4, 2 respectively
C) 2, 4, 6, 2 respectively   D) 2, 4, 2, 6 respectively
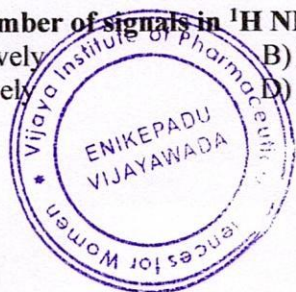
78. How many peaks are expected in low-resolution NMR spectrum of vinyl chloride and ethyl cyclopropane?

A) 3,5 B) 5,3 C) 6,3 D) 3,6

79. What will be the NMR frequency in MHz of bare ^{1}H in a magnetic field of intensity 1.4092 tesla (given $g_N = 5.585$ and $\mu_N = 5.05 \times 10^{-27}$ JT^{-1})?

A) 60 MHz B)120 MHz C) 100 MHz D) 15 MHz

80. At room temperature, what is the number of singlet resonances observed in the ^{1}H NMR spectrum of Me$_3$CC(O)NMe$_2$ (N, N-Dimethylpivalamide)?

A) 3 B) 4 C) 5 D) 2

81. An organic compound (MF; C$_8$H$_{10}$O) exhibited the following ^{1}H NMR special data: 62.5 (3H, s), 3.8 (314, s), 6.8 (2H, d, J 8 Hz), 7.2 (2H, d, J 8 Hz) ppm. What will be the compound among the choices?

A) 4-ethylphenol B) 2-ethylphenol C) 4-methylanisole D) 4-methylbenzyl alcohol

82. Lines which are present in atomic emission spectrum are
A) Brown
B) Dark
C) Bright
D) translucent

83. Background in atomic emission spectrum is
A) Light B)Dark C)Pink D)Blue spaces

84. In Raman spectroscopy, energy of change comes from
A) Electron B) Photon C) Ion D) Molecule

85. The region of electromagnetic spectrum for nuclear magnetic resonance is
A. Microwave B. Radio frequency C. Infrared D. UV-rays

86. Which of the following is an application of molecular spectroscopy?
A. Structural investigation
B. Basis of understanding of colors
C. Study of energetically excited reaction products
D. All of the mentioned

87. The transition zone for Raman spectra is
A) Between vibrational and rotational levels B) Between electronic levels
C) Between magnetic levels of nuclei D) Between magnetic levels of unpaired electrons.

88. The criteria for electronic spin resonance is
A) Periodic change in polarisability B) Spin quantum number of nuclei > 0
C) Presence of unpaired electron in a molecule D) Presence of chromophore in a molecule

89. Which of the following is inversely proportional to the chemical shifts positions (δ)?
A) Frequency of unknown group of protons B) Frequency of TMS
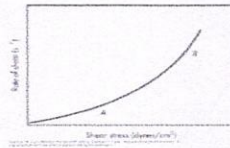C) Operating frequency of the instrument D) All of the mentioned

90. Which of the following is the wave number of near infrared spectrometer?
A) 4000 – 200 cm^{-1} B) 200 × 10 cm^{-1} C) 12500 – 4000 cm^{-1} D) 50 – 1000 cm^{-1}
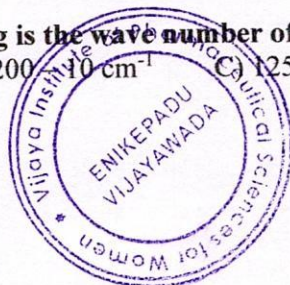
91. The diagram below is a graph of change in shear stress with respect to velocity gradient in a fluid. What is a type of the fluid?

A) Newtonian   B) Non Newtonian   C) Ideal   D) Dilated

92. The slope of rheogram of a plastic flow is called ____.
A) Mobility   B) Fluidity   C) Yield value   D) Yield stress

93. Creep test is used to evaluate ------ type of viscoelastic type of materials
A) Suspensions   B) Ointment   C) Emulsions   D) Lotions

94. Statement 1: Starch is --------- as its viscosity decreases with increase in shear Stress.
Statement 2: Bingham plastics follow Newtonian law of viscosity at lower shear stress.

A) Bingham, False   B) Dilatant, True   C) Pseudoplastic, False   D) Newtonian, True

95. Example of hexadentate ligand is --------------.
A) BF_3 B) DMSO   C) Pyridine   D) EDTA

96. The type of flow for cars index value is 22% --------------.
A) Poor   B) Passable   C) Excellent   D) Very poor

97. Particle volume is measured by ----------------method.
A) Sedimentation   B) Stokes   C) Microscopic   D) Coulter counter

98. The greater the thixotropy, the..... is physical stability of suspension.
A) Lower   B) Higher   C) No change   D) Equal

99. In plastic system, below yield value, the apparent viscosity is -----
A) Lower   B) Higher   C) No change   D)Equal

100. Yield value is indicative of ------.
A) Degree of deflocculation   B) Degree of flocculation
C) Force of flocculation   D) Force of deflocculation