QUESTION BANK (VETERINARY PHARMACOLOGY)

PAPER NO . 18

General pharmacology-1

I.NAME THE FOLLOWING.

1 .Active principle in cayenne pepper .(Capsicin)

2 .A rubifacient of plant origin—(capsicum /cayenne pepper)

3. An emollient of animal origin—(wool fat)

4 .An adsorbent of plant origin.-(activated carbon)

5. An example for racial tolerance—Eschimos to fat)

6. A liquid alkaloid.—(Nicotine)

7. A natural rubifacient.-(Heat, Light)

8. An oleo resin .-(Asafoetida)

9. A drug from sea weeds.-(iodine)

10.Branch of pharmacology that deals with the study of dosage.-(Posology)

11.Capsules containing coated granules.(Spansules)

12.Father of polypharmacy.-(Galen)

13.Father of Medicine .-(Hippocrates)

14. Father of modern pharmacology.—(Oswald Schmiedeberg)

15. Father of American pharmacology.—(John J. Abel)

16.Founder of Journal of Biological chemistry and Journal of Pharmacology and Experimental therapeutics.-(John J. Abel)

17. Father of chemotherapy.—(Paul Ehrlich)

18. Five hydroxyl tryptamine antagonist- (Ondensetron)

19. Major organs of drug conjugation .-(Liver and Kidney)

20. Medicinal solution for washing the mouth.-(Collutoria)

21. Medicinal solution for washing the nasal cavity.-(Collunaria)

22. One liquid volatile oil.-(ol. Eucalyptus, ol. Turpentine, oil of wintergreen)

23. One solid volatile oil.-(Camphor, Thymol ,Menthol)

24. One drug not metabolized by the body.-(Nitrous oxide)

25. One plant oil which is solid at ordinary room temperature .-(cocoa butter)

26. One drug used as antiseptic obtained from sea weeds.-(iodine)

27. plant active principles----(Alkaloids, glycosides, tannins, resins, oleoresins, gums, oils,)

28. Solid preparation intended for introduction in to vaginal canal .-(Pessaries)

29. Scientist who developed hypodermic needle.-(Alexander wood)

30. Scientist who wrote the first materia medica .-(Dioscorides)

31. Soft gelatine disc with medicinal agent for application in the eye.-(Lamella)

32. Solid preparation with medicine for administration in to the rectum.-(Suppositories)

33. Solid preparation with medicine for administration in to the veginal canal .-(pessaries)

34. Solid preparation with medicine for administration in to the nasal tract.-(Bougies)

35. Study of dosage of drugs.-(posology)

36. Study of weights and measures.-(Metrology)

37. Substituted talc for gloves which will not produce any harmful effect in the body.-(Potassium bi tartrate)

38.The most important part of prescription.-(Inscription)

39. The Ancient Egyptian document written about disease and medicine.-(Ebers papyrus)

40. Father of Medicine .-(Hippocrates)

41. The product of acetyl choline hydrolysis.-(Acetic acid and choline)

42. The other name for poultice .-(Cataplasma)

43. Three important active principles present in plants.-(Alkaloids, glycosides, tannins, resins)

44. The common source of iodine.-(sea weeds)

45. Water insoluble hydrocarbon used as vehicles for the preparation of ointments.-(Oil, Wax, Vaseline)

46. Water soluble hydrocarbon used as vehicles for the preparation of ointments.-(polysorbate – 80)

II.STATE TRUE OR FALSE

1.Action of carbon tetrachloride in the body is selective.-(T)

2 .Acidic drugs are not absorbed from the stomach.-(F)

3 .Agonist is having both affinity and efficacy.-(T)

4. Agonist is a drug that produce a pharmacologic effect when it combine with a receptor.-(T)

5 .Agonist have only affinity.-(F)

6 .Alkaloids are soluble in water.—(F)

7 .All the receptors are present on the surface of the cells .-(F)

8. Antagonist have only affinity.-(T)

9. Antagonist is devoid of intrinsic activity.-(T)

10 .Antagonist have only efficassy.-(F)

11. An antagonist is a drug which reduces or abolishes the effect of an agonist.-(T)

12 .Applicaps are hard capsules.-(F)

13 .Area under the curve is the concentration of drug in the systemic circulation.-(T)

14 .A receptor that allows against binding without eliciting response is known as orphan receptors.-(F)

15. At chemoreceptor trigger zone and posterior lobe of hypothalamus blood brain barrier is not seen.-(T)

16. Autoradiography can be used to study the distribution of receptors .-(T)

17. A weak acidic drug will be highly ionized in plasma.-(T)

18. Basic compounds may be concentrated in milk.-(T)

19. Barbiturates have the suffix “al’ in USA.-(T)

20.Barbiturates have the suffix “one ’in UK.-(T

21. Because of species variation ,controlled clinical trials have to be taken up in human patients even though it has been completed in animals.-(T)

22. Bioavailability is the fraction of the drug absorbed as such in to the systemic circulation or the extent to which a drug reaches the site of action.-(T)

23. Bioavailability of drug by i/v route is one.-(T)

24.Blood brain barrier is located at the basement membrane of capillary.-(T)

25. Blood brain barrier is well developed in young animals.(F)

26. Blood interstitial fluid and lung is considered as the central compartment for pharmacokinetic studies.-(T)

27. Blood brain barrier is not well developed in young ones.-(T)

28 .Blood brain barrier is the diameter covering the brain .-(F)

29 .Bone and fat is considered as the peripheral compartment for pharmacological studies .-(T)

30 .By altering the pH of urine the excretion of drug can be altered .-(T)

31. Castor oil is a fixed oil.-(T)

32. Calcium ion is a second messenger.-(T)

33. Carrier mediated transport of drugs occurs against the concentration gradient.—(T)

34. Chemically dissimilar drug must produce similar action.-(F)

35. Change in molecular configuration of a drug changes all actions equally.-(F)

36. Chemically dissimilar drugs never produce similar action.-(F)

37 . Clearance is depended on t 1/2.-(T)

38 .Clearance is a measure of the body's ability to eliminate the drug.-(T)

39. Creosote is an empyreumatic oil .—(T)

40. Cyclic AMP is a second messenger.-(T)

41. Cyclic GMP is a second messenger.-(T)

42. Cyclic AMP is an intracellular messenger.-(T)

43. Diseases and infections may alter drug clearance but not necessarily the t 1/2 value.-(T)

44. Dose is the quantity of drug administered per day.-(F)

45. Drugs having similar action must have similar structure.-(F)

46.Drugs assimilation from all sited of administration depends on solubility.-(T)

47. Drugs having similar action need not have similar structure.-(T)

48 .Drugs act at specific sites of the sensitive cells and this component of the cell have been referred to as "receptor" –(T)

49. Drug protein binding not obeys laws of mass action.-(F)

50. Drugs which are biotransformed by glucuronicacid conjugation will give more duration of action.-(T)

51. Drug biotransformation by glucuronic acid metabolite may be eliminated via the bile.-(T)

52. Each cell have only one G-protein type receptor.-(F)

53. ED 50 is a measure of potency of the drug.-(T)

54. ED 50 is the smallest dose of a drug that shows effect in 50 %of the population.-(T)

55. Efficacy is independent of the slope of or position of the dose response curve.-(T)

56.Empyreumatic oils are volatile oils which do not exist in the living plants. (T)

57. Erythromycin and lincomycin is found to be in higher concentration in milk than in plasma.-(T)

58. Eventhough expired air is a minor route of excretion of drug it is the important route of elimination for gaseous anaesthetic.-(T)

59. Ferric chloride can be used as an intestinal astringent.-(F)

60. Fixed oils leaves grease spot on paper.-(T)

61. Flavanoids are the major active principle present in plants .-(F)

62. For hit and run drug the effect of the drug last for much longer period than the drug itself..-(T)

63. For selecting a drug in clinical situation efficacy is usually more important than potency –(T)

64. Food will not influence the pH of urine in carnivors and herbivors.-(F)

65. Formaldehyde is a liquid available as20% solution.-(F)

66. Formaldehyde is available as formalin.-(T)

67. Generally cold blooded animals have a shorter t ½ for drugs compared to hot blooded animals.-(T)

68. Glucuronic acid conjugation is not well developed in felines.-(T)

69. 70. Glucuronide form of the drug is eliminated via bile.-(T)

70. G-proteins many couple stimulatory response as well as inhibitory response.-(T)

71. G s protein coupled to adenylyl cyclase increase the formation of cyclicAMP .-(T)

72. Highly ionized drugs are less likely to show species variation in metabolism, eg .Gentamicin in dogs and cats.-(T)

73. In cats glucuronide synthesis is less.-(T)

74. In dogs acetylation is absent and so affect metabolism of sulfonamide.-(T)

75. In pigs sulphate conjugation is present only at a low extent.-(T)

76. Intrinsic activity is the property of the drug that permit it to initiate post receptor process which leads to a response.-(T)

77. In accelerated review the manufacturers need not continue testing after approval to demonstrate the therapeutic benefit to the patient.-(F)

78. Intestine is responsible for the first pass effect .-(F)

79. In the two compartment open model of the body the central compartment include the following organ blood, liver, kidney, lungs ,brain and heart.. –(T)

80.In the two compartment open model muscles and skin will come under peripheral compartment .-(T)

81.In the dose response curve a drug with more slope is more potent.-(F)

82. Intra-peritoneal absorption of drug is faster than intra-muscular.-(T)

83. In respiratory affection electuary form of preparation is more preferred.-(T)

84. In-vitro testing of organ toxicity is less reliable .-(T)

85. John J. Abel isolated Insulin and adrenaline for the first time in crystalline form.-(T)

86. Joseph Lister is considered as the Father of Antiseptic.—(T)

87. LD 50/ ED50 is known as Therapeutic index.-(T)

88. Medicinal preparations intended for oral use need not be sterile.—(T)

89.Medicinal preparation for oral therapy need not be sterile.-(T)

90. Microsoml enzymes are mostly seen in smooth endoplasmic reticulum in liver, kidney, intestine and lung –mainly oxidases and cytochrome P-450.-(T)

91. Milk is more basic in reaction compared to plasma .-(F)

92. Mixed –order kinetic has been observed in the absorption of vitamin C-(T)

93. New molecules can be developed from plant active principles .-(T)

94.Nitrous oxide is one of the agents not metabolized by the body.-(T)

95. Non microsomal enzymes are mostly seen in cytoplasm, mitochondria of liver, flavor proteins, oxidase and amidase ,besterase, all conjugation except glucuronidation.-(T)

96. Non ionised drugs will be better absorbed from the GI tract.-(T)

97. Observable effect is called as the intrinsic activity.-(T)

98.Of all the drug assay methods bioassay methods are highly accurate and most reliable .-(F)

99. Official name of the drug is not the approved name .-(F)

100. Only lipid soluble drugs can be metabolised by microsomal enzymes.-(F)

101. Oxidation is a phase I metabolic reaction.-(T)

102. Partial agonists have less intrinsic activity.-(T)

103. Pethidine and Dolantin are the same.-(T)

104. Phase II and phase III study of drugs can be conducted simultaneously.-(F)

105. Phase II biotransformation is called conjugation or synthetic reactions.-(T)

106. Phototoxic reactions occur when photosensitive chemicals exposed to u/v light of 290-320 nm. wave length.-(T)

107. Photoallergic reactions occur when drugs or metabolites which are sensitive to u/v light exposed to u/v light of 320-400nm , causes cell mediated immune response, contact dermatitis like picture.-(T)

108. Pharmacotherapy deals with action of drugs in normal animals or individuals.—(F)

109. Phase II and III studies of drug can be conducted simultaneously.-(F)

110. Phase I study also include structural activity relationship of the drug.-(T)

111. Phase one and phase two studies of drug can be conducted simultaneously.-(F)

112. Positron emission tomography can be used to measure the dopamine receptor blockage .-(T)

113. Posology is the study of weights and measurers.-(F)

114. Potency is dependent on the slope of the dose response curve.-(T)

115. Quarterinary drugs are polar at all urine pH and so eliminated rapidly as they can not be reabsorbed.-(T)

116.Receptor is the chemical group involved in the reaction with drug.-(T)

117. Since milk is acidic in relation to plasma weak organic bases will diffuse from plasma in to milk.-(T)

118 .Soaps are anionic detergent having antiseptic action.-(T)

119. Some drugs are biotransformed by G I flora eg. Cardiac glycoside.-(T)

120.Sodium salicylate is a keratolytic agent -(T)

121. Solid extracts are generally less active than crude form.-(F)

122. Solutions intended for washing the eye is known as collyria.-(T)

123. Spironolactone is a competitive antagonist of aldosterone.-(T)

124. Spiritus are alcoholic solutions of volatile drug.-(T)

125.Structural activity study of one drug increases the cost of development of other drugs .-(F)

126. Standard margin of safety is(LD1/ED 99 -1) x100

127. Sulphur dioxide as such is a powerful disinfectant.-(F)

128. Sub cutaneous administration will have faster action than intra muscular.-(F)

129. Targeted delivery is used in the treatment of all types of diseases.-(F)

130. The mediator of sweat glands in horse is nor adrenaline / adrenaline.-(T)

131. The blood cerebrospinal fluid barrier is formed mainly by the Choroid plexus.-(T)

132. The name Pharmacology is derived from Greek words Pharmacon (drug) and logos (knowledge).—(T)

133. The word Drug is derived from the French word drogue-means dry herb.-(T)

134. The smaller the ED 50 of the drug lesser the potency .-(F)

135. Therapeutic ratio is LD 50/ED 95.-(F)

136. The excretion of weak acidic or weak basic drugs with a pka 5-8 can not be enhanced by altering pH of urine.-(F)

137. The cell component directly involved in the initial action of drug is usually termed as effector site.-(F)

138. The distribution of ionized portion of weak electrolyte is not dependend on its Pka.-(F)

139. Therapeutic index (TI) is LD 50/ED 95.—(F)

140. Therapeutic index (TI) is the ratio of LD 50/ ED 50.-(T)

141. The therapeutic index value increases the margin of safety also increases.-(T)

142. The metabolite of acetylation reaction are polar and water soluble.-(T)

143. Transport process is not existing in the liver for drugs in to bile other than glucuronide drug.-(F)

144. Turpentine is a counter irritant volatile oil .-(T)

145. Volatile oils leaves grease spot on white paper.-(F)

146. Volume of distribution is a measure of apparent space in the body available to contain drug.-(T)

147. When a drug is administered initial rapid decrease (alpha phase) mainly due to distribution of drug.-(T)

148. When a drug is administered later decline after rapid decline (beta phase) Is due to elimination.-(T)

III.WRITE THE ACTIVE INGREDIENTS OF THE FOLLOWING:

1. BIPP: --- (bismuth sub nitrate, iodoform, liquid paraffin)

2. Calamin lotion:--- (zinc carbonate, zinc oxide, glycerine, phenol, bentonite)

3. Dettol;--- (Chloroxylenol, terpinol)

4. Weak Tr. of Iodine:--- (Iodine, potassium iodide, alcohol)

5. White lotion:--- (Zinc sulphate, lead acetate, water)

IV. ODD ONE OUT.

1.Castor oil, peppermint oil, clove oil, turpentine oil.-(castor oil) all volatile oils except castor oil.

2. Gum mucilage , cocoa butter, honey, syrup, glycerine.-(cocoa butter)the only semisolid one.

3. Gentian violet, crystal violet, euflavin, brilliant green.-(euflavin)all basic dyes except euflavin.

4. Kaolin, zinc oxide, boric acid, calamine, Mag. Trisilicate.-(Kaolin) only internal protective.

5. Mineral oil, cotton seed oil, castor oil, linseed oil.-(Mineral oil)-all veg. oils except mineral oil.

6. Phenol, cresol, picric acid, ichthammol, thymol.-(ichthammol) all coaltar derivative except ichthammol.

7. Sulphur dioxide, hydrogen peroxide, formaldehyde, chlorine, iodoform.-(iodoform)all gaseous form except iodoform.

8.Vasoconstrictors, hyaluronidase, spansules, subcutaneous implants.-(hyaluronidase)all helps to reduce absorption except hyaluronidase.

9. White petrolatum, yellow Vaseline, tween 80, liquidparaffin.-(Tween 80) the only one water soluble one

V.FILL UP THE BLANKS WITH MOST APPROPRIATE WORDS

1.Acidic and neutral drugs are generally bound to plasma protein fraction mainly to .....-(albumin)

2. A more gradual decrease in response to a drug , taking days or weeks to develop is called .....—(tolerance)

3. A parallel shift of log dose response curve is seen ……antagonism.-(competitive)

4. Antagonist have affinity but have no .....--(efficacy) .

5. Alcoholic extract of a drug is known as ……(Tinctures)

6. A minimum dose of one std, deviation from the mean can cause response in ……percent of the population.-(68%)

7. A Greek physician called ……(372-287 BC) completed a herbal formulary in which he described 450 plants having medicinal value.(Theophrastus)

8. A Greek physician ,……(130-200 AD) compiled many books on the subject of medicine ,his medicinal formulations were popularly known as Galenical preparations.—(Claudeus Galen)

9. Among the binding forces between drugs and receptors …….bonding is the most powerful --(covalent)

10. Basic drugs are bound primarily to ……--(alpha-1 acid glycoprotein)

11. Capillary endothelial cells have large channels as big as …….A in size .—(40)

12. DDT was introduced as an insecticide by scientist ……..in Switzerland.-(Geigy)

13. Drugs like phenytoin, pentobarbitone and phenothiazine binds to blood components like.....-(haemoglobib)

14.Drugs like imipramine and chlorpromazine bind with blood components like.....-(RBC membrane).

15. For weak bases Pka =PH + log concentration of ……/ con. Of ……—(ionized base/ non ionized base)

16. For getting 100% bio availability .....route of administration is better.-(i/v)

17.Glucuronide form of the drug is eliminated via …….-(bile)

18. James Lindin 1747 introduced curative vitamin therapy by using orange and lemon in the treatment of …….—(Scurvey)

19. Highly irritant drugs are generally administered by .....route—(i/v)

20. Hypodermic needle was devised by ……..-(Alexander wood)

21. Insulin was isolated first by .....-(Banting and Best)

22. If cumulative effect of two drug is more than the sum total of each one it is called as .....-(synergism)

23. In a frequency distribution curve (Gaussian)a minimum dose of 2 std, deviation from the mean can cause response in ……percent of the population.-(95%)

24. In the log dose response curve the efficacy is indicated by the …….of the curve.-(height)

25. Non parallel shift of log dose response curve with low E max is seen in ……..antagonism.-(non competitive)

26. Passive diffusion of drug is directly proportional to the concentration gradient and……

…..coefficient of the drug.—(lipid water partition)

27. Pre-systemic metabolism of drug is otherwise called as .....effect.—(first pass)

28. Pills contain only a …….. dose medicine.-(single)

29. Solid extracts are otherwise known as extractum …….-(siccum)

30. Solutions for washing the mouth is known as……(collutoria)

31. Steroid hormone and thyroid hormone are bound to ……--(specific globulin)

32. Study of absorption , distribution, metabolism and elimination of drug by the body is known as.....(Pharmacokinetics)

33. Study of biochemical and physiological mechanism of action of drug in the body is known as .....(pharmacodynamics)

34. Study of qualitative and quantitative evaluation of the activity of drug is called .....(pharmacometrics)

35. The measure of strength of binding of a drug to a receptor is called as .....—(affinity)

36. Therapeutic index is the ratio of .....-(LD 50 / ED 50)

37.The earliest known chemotherapeutic agents were of …….origin.—(plant)

38.The hereditary basis for difference in pharmacological response to a drug in a population is dealt under .....-(Pharmacogenetics)

39. The measure of how strongly a drug binds to a receptor binding site is called .....—(affinity)

40. The modern age of pharmacology begins with the advancement of…….(chemistry.)

41. The structural modification of an established drug often yield congeners that are aptly termed as ……..drugs.—(“me-too”)

42. The non ionized portion of drug is……and can be readily diffuse across cell membrane.—(lipid soluble)

43. There are two type of antagonist …….and ……--(Competitive and non competitive)

44. The earliest written compilation on drug is of ……..origin.-(Chinese)

45. When an antagonist is present, the log dose response curve is shifted to ……..indicating that a higher concentration of agonist is necessary to achieve the same response as and when antagonist is absent. –(right)

46. Urine of carnivores animal is …….in pH—(Acidic)

47. Urine of herbivores animal is ……..in pH.-(basic)

48. ……..(organ) is the primary organ for drug excretion.-(kidney)

49……(animal) have been suggested as possible “Sentinel” animal for detection of toxic anti -cholinesterase agents like O. P because of their sensitivity.-(Sheeps)

50…….are drugs that binds to the receptors suppressing the constitutive signaling activity eg. Propranolol , antihistamines.(inverse agonist)

51. ……effect of a drug has also been termed as meta reactions.—(unusual)

52. ……in 380-287 BC classified medicine systematically.—(Theophratus)

53. ……..gave the first intra venous injection .-(Christopher wren)

54. ……..are solid preparations intended for administration in to the rectum.-(suppositories)

55. ……deals with the distribution of drug in the body.-(Pharmaco kinetics)

56. .....deals with the study of genetically determined variation in response to drug .(pharmacogenomics)

57. ……assay has to be performed to standardize partially purified drugs such as crude extract of plants.—(Bio)

58. ……,an Egyptian formulary is the earliest (1500 BC) written record of medicinal plants containing references to crude drugs.—(Papyrus of Ebers.)

59. …… (460-377 BC) is considered as the “Father of medicine” . He separate Greek medicine from religion , made extensive use of medicinal herbs in the practice of medicine.—(Hippocrates)

60. ……..is known as Persian Gallen.-(Avicenna)

61. ……..introduced mercury in the treatment of Syphilis .—(Paraclsus/ Theopharastus)

62. ……..(1632-1723) made first i/v inj. In dogs.—(Christopher wren)

63. ……, considered as father of cardio vascular pharmacology he published the monograph on Digitalis.-(William Withering)

64. ……..antagonist binds irreversibly with receptors site or another site that inhibit the response to the agonist . action of antagonist can not overcome by increasing the quantity of agonist .—(Non competitive)

VI.CHOOSE THE CORRECT ANSWERS FROM THE GIVEN ONES

1.Ability of the drug to produce effects is called as a) affinity b) efficacy c) potency d) selectivity.—(b)

2. Acidic drugs re generally binds with a) plasma albumin b) plasma globulin c) glycoprotein d) alpha 1 acid glycoprotein.-(a)

3. Activated charcoal prevent the gastric absorption of poisons a) chemical antagonism b) competitive antagonism c) physical antagonism d) dispositional antagonism.-(c)

4. Acetylation of amino group does not take place in a) dogs b) pigs c) rabbits d) cats --(a)

5. Active transport of drugs is a) against concentration gradient b) require energy c) inhibited by metabolic poison d) all the above –(d)

6. Agonist have a) efficacy and affinity b) only affinity c) only efficacy d) none of the above.-(a)

7. Aglycon can be released from the cardiac glycoside by a) acid hydrolysis b) enzymatic hydrolysis c) both a and b d) none of the above.-(c)

8. All the following are non microsomal enzyme except a) alcohol dehydrogena

se b) monoamine oxidase c) glucuronidase d) xanthine oxidase -(c)

9. Among various plant active principles one of the following is most potent. a) glycoside b) alkaloids c) saponins d) resins.-(b)

10. Antagonist have a) affinity and intrinsic activity b) no intrinsic activity but have affinity c) no affinity but have intrinsic activity d) no affinity and intrinsic activity.—(b)

11. A person taking drug A had the tendency to increase the dose and on deprival of the drug he developed withdrawal symptoms. This may be called as a) habituation b) tolerance c) addiction d) allergy e) anaphylaxis.-(c)

12. Atropinase enzyme is comparatively more in a) sheep b) rats c) cattle d) rabbits.-(d)

13. Before marketing of a drug the following study has to be completed a) acute toxicity b) chronic toxicity c) either of the above d) both the above.—(d)

14. Bio-availability is 100% with one of the following routes: a) IM b) Sc c) oral d) IV .—(d)

15. Bioavailability is 100% in the following route of administration a) intra peritoneal b) intra muscular c) sub cutaneous d) none of the above –(d)

16. Carbolic acid is chemically : a) phenol b) cresol c) benzalkonium d) none.—(a)

17. Capacity for sulphate conjugation during drug metabolism is limited in a) cats b) dogs c) pigs d) all the animals—(c)

18. Elimination of a drug from the body refers to a) biotransformation b) excretion c) biotransformation and excretion d) half life --(c)

19. Excitatory post synaptic potential is characterized by a) influx of sodium ion b) influx of potassium ion c) influx of chloride ion d) efflux of sodium ion --(a)

20. Following drugs are examples for caustics. a) silver nitrate b) phenol c) trichloro acetic acid d) all the above .-(d)

21. Following are examples for synaptic transmitters which act via ion channels a) acetyl choline at nicotinic receptors b) glycine on GABA receptors. c) both .-(c)

22. Following lotions have astringent action.- a) Boric acid lotion b) White lotion c) Potassium permanganate lotion d) all the above.-(b)

23. For the purpose of kinetic studies the following organs are included in the Central compartments a) Blood b) ECF c) Lungs d) Liver e) Kidney f) Heart g) all the above --(G)

24. For the purpose of kinetic studies the following organs are included in the peripheral compartment a) Muscles b) Skin c) Body fat d)all the above.—(D)

25. Germicide applied to inanimate objects are called : a) antiseptic b) detergents c) disinfectants d) cleansing agent.--(b)

26. Germicide applied to living objects are called : a) antiseptics b) detergents c) disinfectants d) cleansing agent.--(a)

27. Hundred percent bioavailability is possible with a) i/v route b) i/m route c) s/c route d)oral route.-(a)

28. Hydroalcoholic solution that is sweetened and flavoured is known as a) mixture b) syrups c) spirits d) elixir --(d)

29. In the kidney drug is excreted by a) glomerular filtration b) active tubular secretion c) passive tubular reabsorption d) all the above. –(d)

30. IP3 generation in the cell increases the concentration of a) calcium ions b) ATP c) cAMP d) all the above.-(a)

31. Larger the therapeutic index greater is the safety of the drug.- a) true b) false c) not known.-(a)

32. Magnesium sulphate is generally administered for therapeutic purpose by a) I/v route for hypomagnesemia, Euthanesia b) i/m route for muscle relaxation c) Oral as purgative d) all the above—(d)

33. Margin of safety is a)LD 50/ED 50 b) LD 25 /ED 75 c)LD 1 / ED 99 d) LD 99/ ED 1.-(a)

34. Non competitive antagonist have a) high affinity b) have covalent bonds c) irreversible bonding d) all the above.-(d)

35. One of the following lotion is having astringent action a) boric lotion b) white lotion c) potassium permanganate lotion d) none of the above .-(b)

36. Oral route of administration is a) safe and convenient, economical b) may require the drug to be mixed in the food to facilitate administration c) food may stimulate bile secretion which will help to dissolve lipophilic drug to increase absorption .d) all the above are correct.-(d)

37. One of the following drugs can be recommended as a styptic a) ferric chloride b) vitamine K c) calcium gluconate d) sodium citrate.-(a)

38. Of all the plant origin active principles, one of the following is most potent. A) glycosides b) saponins c) alkaloids d) resins.-(c)

39. One of the following is nitrogenous in nature: a) glycosides b) resins c) gums d) alkaloids .-(d)

40. Pharmacokinetic deals with study of drugs on a) absorption b) distribution c) biotransformation d) excretion e) all the above.-(e)

41. Plasma protein bound drugs a) is readily excreted by kidney b) rapidly leaves circulation c) act as a reservoir d) is rapidly metabolised.-(c)

42. Posology is the study of a) dosage b) weight c) measures d) all the above -(a)

43. Re distribution is observed with drugs which are a) highly lipid soluble b) highly water soluble c) acidic d) basic -(a)

44. Some of the following drugs induce drug metabolizing enzymes a) barbiturate b) chloral hydras c) carbamazepine d) Griseofulvin e) Ethanol f) all the above.-(F)

45. Study of action of drugs in the absence of disease is called as: a) pharmacodynamics b) pharmacotherapeutics c) pharmacokinetics d) pharmacognosy.-(b)

46. The phenomenon of acute development of tolerance to drug is known as a) tachyphylaxis b) super sensitivity c) hyper sensitivity d) none of the above .-(a)

47. The binding forces of a drug to receptors are a) hydrogen bond b) covalent bond c) vanderwal bond d) all the above.-(d)

48. The antagonism is of a) receptor antagonism b) physiologic antagonism c) chemical antagonism. d) all the above.-(d)

49. The binding forces of drug to receptors are a) hydrogen b) covalent c) vanderval d) all the above.-(d)

50. The ratio of LD 50 and ED50 is called as a) dose ratio b) therapeutic index c) potency d) safe dose —(b)

51. The rate of absorption of a drug varies with the root of administration. They are in the order fast to slow in one of the following example. a) IV > IP >IM >SC b) IP > IM > oral > SC c) IM > IP > SC > oral d) IM> SC> IP>oral.—(a)

52. The nitrogenous substances of plants with suffix “ine” are called as: a) alkaloid b) glycosides c) tannins d) saponins.-(a)

53. The best examplefor difference in action because of change in root of administrationi is a) ketamine b) thiopentone c) sodium salicylate d) magnesium sulphate.-(d)

54. The drug which is a phosphodiesterase type V inhibitor that is used in dogs to decrease the pulmonary artery pressure is a) nedocromil sodium b) pirbuterol c) metaproterenol d) sildenafil -(d)

55. The development of hypo reactivity after the administration of a few dosage of drug is termed as a) tachyphylaxis b) supersensitivity c) hypersensitivity d) none of the above --(a)

56. The binding of drugs to tissue proteins or plasma proteins means increase in duration of action of a drug. a) true b) false c) not yet known.-(a)

57. The following are the signal transduction mechanism in cells a) ligand gated channel b) G-proteins c) protein tyrosine kinase d) all the above.—(d)

58. The first chemotherapeutic agent other than plant origin include a) Mercury b) Copper c) Zinc d) Iron --(a)

59. The local effect of drugs can be prolonged by vasoconstriction a) true b) false c) not known.-(a)

60.The nature of medication is concealed from the patient a) placebo effect b) single blind c) double blind d) none of the above ---(b)

61. The passage of lipid soluble non electrolyte is high in a) acidic pH b) basic pH c) independent of pH d) none of the above ---(c)

62. The mechanism by which most of the drugs are absorbed is a) simple diffusion b) active transport c) pinocytosis d) facilitated diffusion.-(a)

63. The phenomenon of acute development of tolerance to drug is known as a) super sensitivity b) tachyphylaxis c) hyper sensitivity d) none of the above.-(b)

64. Which one of the following enzymes influences the t 1/2 of aspirin in domestic animals. a) glutathione reductase b) glucuronyl transferase c) N-acetyl transferase d) cyclooxygenase.-(b)

65. Volatile drug may be best administered by a) oral route b) inhalation c) sublingual d) intrathecal administration.-(b)

66. Which of the following drugs produces qualitatively different responses when given by different routes a) sodium bicarbonate b) folic acid c) magnesium sulphate d) barium chloride.-(c)

VII. CHOOSE THE CORRECT ANSWERS AND EXPLAIN WHY?

1..All the following statement about the therapeutic index are true except .A) a high therapeutic index suggests that the drug is safe to use. B) a low therapeutic index suggest that the drug is dangerous to

use therapeutically. C) a high TI indicates that the ED 50 far exceeds the LD 50. D) the standard safety margin is a better measure of the drugs safety than is TI. E) quantal dose response

The answer is C. The formula for determining the therapeutic index is LD 50/ ED50, If the ED 50 was larger than the LD 50 the TI would be small.

2. which of the following statement concerning drug receptors is true? A) drug receptor play an important role in the bioavailability of drugs B) drug can not act unless they are first released from a drug receptor. C) a drug can not act as antagonist even if it is bound to a drug receptor. D) drug can not act unless they are first bound to a receptor. E) most drugs combine with their receptor by forming covalent bonds.

The answer is C. Antagonists have a high affinity for receptors and occupy the sites. The degree of binding and occupancy of the receptor site is a measure of drugs affinity. Answer D is not correct since some drugs can exert an effect without acting on a receptor system, for example, neutralization of acid as with an antacids and drug acting through chelation.

3. The maximum effect achieved by a drug is a measure of A) the drugs potency B) The drugs efficacy C) the drugs antagonistic magnitude. D) the drugs therapeutic index. E) the drugs lipid solubility.

The answer is B. drug efficacy or intrinsic activity is a measure of the drug to produce an effect.

4. A drug is eliminated by first order process . Assume 50 mg of the drug is administered i/v and at 6 hours, 25 mg remain in the body. How much drug will remain in the body at 24 hours ? A) 18 mg B) 15 mg C) 10mg D)6mg E) 3mg

The answer is E. Since the drug is eliminated by first order process, this indicates that a constant fraction of drug is eliminated per unit of time. Since 25 mg remains at 6 hours, this indicates that the t1/2 is 6 hours. Using this reasoning we can determine the following . 50mg in the body at time 0, 25 mg in the body at time 6 hours, 12.5 mg in the body at time 12 hours, 6.25 mg in the boy at time 18 hours ,3.12 mg in the body at time24 hours(correct answer)

5 .A 20 kg dog is dosed with 5mg of a drug. If the half life of the drug is 30minutes, how long will it take for the animal to have less than 1mg of the drug remaining in the body? A) 90min B) 120 min C) 150 min D) 180 min E) 210 min

The answer is A. The dogs body will contain the following amount of drug at the time indicated. 30min =2.5 mg, 60 min. =1.25 mg, 90 min. = 0.62 mg (the correct answer)

6. .You are presented with a severely dehydrated dog in renal failure. Its glomerular filtration rate is one fourth normal. The antibiotic you want to administer is cleared by glomerular filtration. Assume the drugs volume of distribution is only in the extracellular fluid and that Vd is one half normal . In a normal animal the antibiotics half life is 60 minutes, what would it be in this animal? A) 30min. B) 60min. C) 90 min. D) 120 min. E) 240 min.

The answer is D. the drugs half life(t ½) is influenced by the volume of distribution (Vd) and body clearance (Cl B) according to the following formula t ½ =B. Vd= 0.693.Vd/ClB. Since clearance is reduced to 0.25 of normal and volume of distribution is 0.5 of normal, the t ½ is doubled . Thus in this dog the expected t ½ would be 120 min.

7. The plasma concentration of drug X in a dairy cow is 5 micro gram / mL. Assume drug X is a weak base with a pka of 8.4, and the milk pH is 6.4 and the pH of plasma is 7.4. What is the concentration of drug in the milk (microgram/mL)? A) 5 .0 B) 30.0 C) 45.0 D) 55.0 E) 500.0

The answer is C . knowledge of the Henderson –Hasselbalch equation is necessary to solve this problem. Since the drug is a weak base the proper formula to use is pKa = pH + log x ionized base (I)/ non ionized base (u). It is the U form of the drug which is lipid soluble and able to cross the biologic membrane. At equilibrium the concentration of U will be the same on both sides of the biologic membrane. The drug will dissociate on both side of the membrane based on the pH of the environment.

8. the mechanism by which most drugs are absorbed following an intramuscular injection is A) simple diffusion B) active transport C) pinocytosis D) facilitated diffusion.

The answer is A. Absorption from an injection site in to the vascular compartment permits the drug to be distributed systematicallty. Diffusion of the drug through the capillary membrane or capillary channels (pores) permits its absorption.

9. Drug X is a weak acid with a pka of 4.0 approximately, what percent of the drug is ionized in a pH 2c environment? A) 10% B) 5 % C) 1% D) 0.1% E) 0.5%.

The answer is C. Use the Henderson –Hasselbalch equation for an acid. pKa = pH +log x non ionized acid(U)/ionized acid(I), 4=2+ log U/I, 2= log U/I, take the antilog of both sides:100 = U/I, if U =1 unit of drug then I= 0.01 unit of drug; U+I =1.01 unit of drug. By definition , U+ I =100%. Thus 1.01 units of drug = 100% Thus: 0.01 ionized drug /1.01 total drug = X% /100% X= 0.99 % or approx.1%

10. The mechanism by which pre treatment with Phenobarbital for several days decreases the duration of action of pentobarbital involves A) stimulation of Phenobarbital of the synthesis of microsomal enzymes in the liver. B) neutralization by phenobarbital of naturally occurring inhibitors. C) acceleration of the excretion of pentobarbital. D) competition for receptor sites in the CNS. E) increased binding of pentobarbital to plasma proteins.

The answer is A. Pentobarbitone is oxidized by the cytochrome P450 enzyme system present in the endoplasmic reticulum (microsomes) of the liver. Pre treatment with phenobarbitone induces cytochrome P450 enzymes in the liver. Thus , animals pre treated with phenobarbitone for several days have a greater capacity to metabolise pentobarbitone.

11. The renal clearance of a drug (weak organic base) is favored if the drug A) has low solubility in water. B) reduced renal blood flow. C) has a high degree of binding to plasma protein. D) is put in the ionized form by acidifying the urine. E) is put in the non ionized form by alkalinizing the urine.

The answer is D. Acidification of the urine increases the percent of the weak base in the ionized form. The ionized form of the drug crosses the biological membrane poorly and thus is not able to be passively reabsorbed from the tubule once filtered. This enhances its elimination. Answer E is incorrect since in the non ionised form it is reabsorbed to the greater extent thus decreasing excretion.

12. The major organ for drug excretion is the A) brain B) liver C) kidney D) spleen E) G.I tract.

The answer is C. Drug in the urine are voided along with the urine thereby eliminating the drug from the body. However, some drugs are excreted in to the faeces, particularly the ones that are not absorbed when administered orally.

13. Biotransformation of drug usually results in the A) formation of metabolites which are usually more polar B) formation of metabolites which are less polar C) formation of substances which are more active than the drug itself. D) liver toxicity. E) formation of a carcinogen.

The answer is A. Following phase I and Phase II biotransformation the chemical is usually more polar (more water soluble) and has less biological activity.

14. which of the following drug characteristics will tend to favor a low apparent volume of distribution? A) Excessive plasma protein binding B) a large molecular weight C) high water solubility D) all of the above are correct E) none of the above (A,B,C)

The answer is D . A high percent of drug bound to plasma protein will keep the majority of the drug in the vascular compartment . Drugs with a high degree of water solubility generally have low solubility in lipids and therefore would be expected to cross biologic membranes less well, there by limiting their distribution.

15. The two curves below were obtained for drug A and drug B. The ordinate represents the percent of animals responding to the beneficial effect of the drug. Which of the following statement is most correct.

A) Drug A is more potent than drug B) drug B is more potent than drug A C) drug A is 30 times more potent than drug B. D)drug A is 300 times more potent than drug B. E) drug B is 30 times more potent than drug A.

The answer is C .Potency refers to the amount of drug required to produce a specified effect or response. Drug A is more potent than drug B. The ED 50 for drug A is 10mg/kg, while that for drug B is 300 mg.kg. Drug A is 30 times more potent than drug B.

16. which of the following is a correct statement regarding a partial agonist? A) it is a drug that is able to produce the full cell/tissue response. B) it is a drug that induces a response but the maximum response is less than the maximum response to a full agonist. C) it is a drug that binds to the receptor,

suppressing the receptors basal intrinsic activity. D) it is the drug that has high affinity for the receptor, but has no intrinsic activity.

The answer is B. A partial agonist is a drug that induces a response, but the maximum response is less than the maximum response to a full agonist. A full agonist is a drug that is able to produce the full cell/tissue response. An inverse agonist is a drug that binds to the receptor, suppressing the receptors basal intrinsic activity. A receptor antagonist is a drug that has high affinity for the receptor, but has no intrinsic activity.

17. Activation of which of the following G protein-coupled receptors will most likely cause an increase in Ca 2+ release from the endoplasmic reticulum? A) Gs B) G i/o C) Gq

The answer is C .Activation of Gq-coupled receptor will stimulate phospholipase C-beta to synthesize IP3 from PIP2. IP3 will bind to its receptors on the endoplasmic reticulum to release VA2+ from this organelle. Gs activates adenylyl cyclase which increase the synthesis of cyclic AMP. Gi/o inhibits adenylyl cyclase.

18.. which of the following is a correct statement regarding species variation in pharmacokinetics/ pharmacodynamics? A) In the dog, glucuronidation of drug is only present at a low rate. B) xylazine is a much more potent sedative in horse than cattle. C) horse have high levels of plasma esterase than cattle to break down succinylcholine. D) non herbivores have a more complete GI absorption of a benzimidazole anthelmintic than herbivores. E) most of lipophilic organic bases have smaller volumes of distribution in ruminants than monogastric animals.

The answer is C. Horse have higher level of plasma esterases than cattle to break down succnylcholine, this is why dosage is higher in horse. In cats glucuronidation is at a low rate this is why acetaminophen is contra indicated in cats. This is metabolized by glucuronidation . Xylazine is much more potent sedative in cattle than horse, since their receptors (alpha2 D) are very sensitive to xylazine. Herbivores have a more complete GI absorption of benzimidazoles than non herbivores, since they have a larger GI tract to perform this function. Most of lipophilic organic base have larger volumes of distribution in ruminants than monogastric animals.

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