

GPAT 2015

Polymorphs in pharmaceutical solids are detected by which technique?

- A) MS B) LC-MS C) **Solid state NMR** D) Coulter counter

A series of α -acylureido penicillins like azlocillin, mezlocillin, and piperacillin are superior because of

- A) reduced acid hydrolysis B) increased β -lactamase resistance
C) **improved penetration through the cell envelope** D) Slow rate of metabolism

What is the minimum age prescribed for registration of pharmacist?

- A) 17 B) **18** C) 21 D) 25

In the diagnosis of myasthenia gravis, only one of the following drugs will be used as a drug of choice:

- A) Neostigmine B) Pyridostigmine C) Physostigmine D) **Edrophonium**

Methyl [5-(propylthio)-1H-benzimidazol-2-yl]carbamate is Geneva name of which of the following drug?

- A) Mebendazole B) **Albendazole** C) Thibendazole D) Triclabendazole

Which of the following is oil of fruit pulp?

- A) Arachis oil B) Castor oil C) **Olive oil** D) Apricot oil

Synthesis of aspirin involves:

- A) Methylation of COOH group B) Methylation of OH group
C) Acetylation of COOH group D) **Acetylation of OH group**

Biologically active arachidonic acid is:

- A) all trans eicosatetraenoic acid B) **all cis eicosatetraenoic acid**
C) all trans eicosatrienoic acid D) all cis eicosatrienoic acid

Antidiabetic action of gliburide starts at molecular level by which mechanism?

- A) Phosphorylation of receptor B) Binding to potassium ions
C) **Decrease in potassium efflux** D) Increase in potassium efflux

Oral rehydration salt contains ionic electrolytes in concentration mmol/L:

- A) Na^+ 20, K^+ 10 B) Na^+ 40, K^+ 20 C) Na^+ 53, K^+ 40 D) **Na^+ 60, K^+ 20**

Salol and thymol forms ___ system containing solid and liquid phase in the phase diagram.

- A) 1 component B) **2 component** C) 3 component D) eutectic mixture

Blood sugar is well controlled when Hemoglobin A1C is:

- A) **Below 7%** B) Between 12%-15% C) Less than 180 mg/dL D) Between 90 and 130 mg/dL

Which of the following diabetes drugs acts by decreasing the amount of glucose produced by the liver?

- A) Sulfonylureas B) Meglitinides C) **Biguanides** D) Alpha-glucosidase inhibitors

Ulcerative bowel disease affects which of the following organ?

- A) Duodenum B) **Colon** C) Rectum D) Stomach

Vigabatrin is a GABA analogue that potentiates action of GABA in the brain because it :

- A) binds to GABA receptor and acts as agonist
B) **inhibits GABA transaminase**
C) blocks NMDA receptor via the glycine binding site
D) inhibits neuronal reuptake of GABA from synapses

Which of the following is not an indole alkaloid?

- A) **Pilocarpine** B) Reserpine C) Deserpidine D) Strychnine

In mass spectrum, the base peak for alkyl benzene is obtained at m/z:

- A) 77 B) **91** C) 92 D) 105

In acidic pH the oxygen load of hemoglobin is lowered. This observation is termed as:

- A) **Bohr effect** B) Dalton's law C) Boyle's law D) Haldane effect.

Characteristics of drug-protein binding:

- P) often parallels drug lipid solubility.
Q) drug-plasma albumin binding tends to be relatively nonselective.
R) acidic drugs bind to albumin while basic drugs bind to glycoproteins.
S) in rheumatoid arthritis patients, increased alpha1-acidic glycoprotein tends to promote increased lidocaine protein binding.

- A) P and Q B) P, Q and R C) **P, Q R and S** D) P and R.

When HLB value of surfactant is 10 to 11, it acts best as:

- A) Solubilizer B) **O/W emulsifier** C) W/O emulsifier D) Detergent

Which of the following is the reagent used to develop colour in performing limit test of lead?

- A) Thioglycolic acid B) **Dithiazone** C) Sodium tetraphenylborate D) Arsine

What is/are use/s of phenol coefficient?

- A) **To compare a disinfectant's killing efficacy to that of phenol**
B) To determine the dilution at which the disinfectant is to be used
C) To determine the purity of disinfectant.
D) All of the above

In pinacol-pinacolone rearrangement, the final product is ketone. What is the starting compound for the rearrangement?

- A) 1,1-diol B) **1,2-diol** C) 1, 3-diol D) Geminal diol

C=O stretchings are very strong and easily observable bands in IR spectroscopy. However in the IR spectrum of glucose C=O absorption band is not seen. Why?

- A) In glucose, C=O group is not terminal
- B) In glucose C=O group is absent
- C) In glucose, hemiacetal group is present
- D) In glucose, hemiketal group is present

The specific rotation of glucose is in which of the following range?

- A) 52-53°
- B) 112-113°
- C) 36-37°
- D) 1

Nitrites are used in ailments as:

- A) Cerebral ischemia
- B) Arrhythmia
- C) Cardiac ischemia
- D) Hypertension

Cyclic AMP (cAMP) is an important second messenger in signal transduction pathways. Which enzyme catalyzes the generation/accumulation of cAMP after a receptor-ligand interaction?

- A) Protein kinase A
- B) cAMP phosphodiesterase
- C) Guanylyl cyclase
- D) Adenylate cyclase

False for Type I hypersensitivity: Hypersensitivity type I is:

- A) mediated by IgE
- B) immediate
- C) exemplified by tuberculin test
- D) atopic

Which of the following is a necessary cofactor in the formation of a blood clot?

- A) vitamin K
- B) fibrinogen
- C) calcium
- D) prothrombin

To remove bacteria, viruses and pyrogens from water with efficiency of about 90-99 % which method can be employed?

- A) Sterilization
- B) Ultrafiltration
- C) Reverse osmosis
- D) Nanofiltration

Which is the active constituent in henna?

- A) Juglone
- B) Menadione
- C) Lawsone
- D) Plumbagin

The test used to detect the irritancy of a chemical is:

- A) Draize eye test
- B) ROAT test
- C) Dimethylglyoxime test
- D) Corneometry

The haemolytic index shows presence of which chemical constituent in the crude drug?

- A) di- and sesquiterpene
- B) saponin
- C) steroid
- D) aliphatic monoterpene

Identify the IUPAC of dexamethasone.

- A) 2-Chloro-6 α ,9 α -difluoro-11 α ,17,21-trihydroxy-16 α -methylpregna-1,4-diene-3,20-dione
- B) 9 α -Fluoro-11 β ,17 α ,21-trihydroxy-16 α -methylpregna-1,4-diene-3,20-dione
- C) 9 α -Fluoro-11 β ,17 α ,21-trihydroxy-16 β -methylpregna-1,4-diene-3,20-dione
- D) 6 α -Fluoro-11 α ,21-dihydroxy-16 α -methylpregna-1,4-diene-3,20-dione

Tamoxifen is nonsteroidal drug acting at steroid receptors. It produces which type of effect?

- P) Androgen Q) Antiestrogen R) Antiprogesterone S) Estrogen
A) P and Q B) **Q and S** C) Q and R D) R and S

What is the objective of trademark?

P) To claim exclusive properties of products or services

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Q) To claim innovation of products or services

R) To deal with market place of expressive ideas

S) To protect consumers from being misled

- A) P and Q B) Q and R C) **P and S** D) Q and S

Which of the following method is useful for measuring the number of viable cells in a culture?

A) Plate count technique

B) Dry weight method

C) Petroff-Hauser counter

D) Light scattering in a spectrophotometer

Who were two of the pioneers in the area of Total Quality Management?

- A) Fayol; Weber B) Taylor; Gilbreth C) Owen; Munsterberg D) **Deming; Juran**

Consumer Protection Act was enacted in which year?

- A) 1996 B) 1991 C) **1986** D) 1984

Which of the following aminoglycoside is used in treatment of TB?

- A) Neomycin B) Gemtamicin C) **Streptomycin** D) Kanamycin

To create successful new product, a company understands consumers, markets, and competitors and develop a/an:

A) impressive advertising campaign

B) strong Web site to push the product

C) aggressive marketing strategy

D) **product that satisfies consumers' needs**

The labeling 'Sipped and swallowed without addition of water' is meant for which kind of dosage forms?

- A) **Linctuses** B) Mixtures C) Elixirs D) Liniments

The hydroxy derivative of cymene is called as what?

- P) Thymol Q) Carvacrol R) Menthol S) Cumene

- A) P, Q, R and S B) P, Q, and R C) **P and Q** D) Only P

Identify the inhalational anesthetic agent containing a bromine atom.

- A) **Halothane** B) Isoflurane C) Propofol D) Fluroxene

Which of the following are the correct properties of ferroin? Ferroin is:

P) 1,10-phenanthroline

Q) a bidentate ligand complex

R) red in reduced form

S) blue in oxidized form

A) P and Q

B) R and S

C) P, R and S

D) P, Q, R and S

If one part of solute is soluble in 30-100 part of solvents, which descriptive term is appropriate to describe is solubility?

A) Freely soluble

B) Soluble

C) Sparingly soluble

D) Slightly soluble

Which of the following classes of medication is the most common initial treatment of men with symptomatic benign prostatic hypertrophy (BPH)?

A) alpha-1 agonist

B) alpha-1 blocker

C) beta-1 agonist

D) beta-2 blocker

All of the following NSAIDs are safe to be used in children EXCEPT.

A) Aspirin

B) Acetamenophen

C) Indomethacin

D) Ibuprofen

Which of the following hormones acts on its target cell via a second messenger?

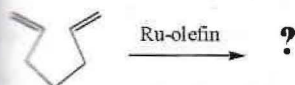
A) Angiotensin II

B) Thyroxine

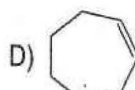
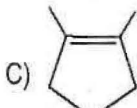
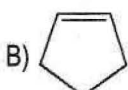
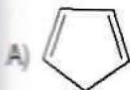
C) Estrogen

D) Aldosterone

What will be the product of following reaction?



B is answer



Formation of active $1,25(\text{OH})_2 \text{D}_3$ occurs in which organ?

A) Skin

B) Kidney

C) Liver

D) Gut

Which of the following drugs should be used for emergency treatment of heroin overdose?

A) Naltrexone

B) Pentazocine

C) Dextromethorphan

D) Naloxone

An acceptable emulsion should be stable with no visible signs of separation at 45°C or 50°C for at least how many days?

A) 10-15 days

B) 15-30 days

C) 60-90 days

D) 90-120 days

If X is an equivalent of silver deposited in silver coulometer and Y is an equivalent of copper deposited in copper coulometer when constant current is passed through the electrochemical cell for the same time which of the following is correct?

A) $X=Y$ B) $X=2Y$ C) $X=Y/2$ D) $2X=Y$

The major constituent of castor oil is:

A) Ricinoleic acid

B) Ricinoliene

C) Ricinelaidic acid

D) All of the above

Which of the following reagents can be used for alkaloid detection?

P) Mayer reagent

Q) Kedde reagent

R) Dragendorff reagent

S) Alcoholic solution of 2,4-dinitrophenylhydrazine

A) Only P and Q are correct

B) Only P and R are correct

C) Only Q and R are correct

D) Only R and S are correct

A) $P + F = C - 1$ B) $F = P - C + 1$ C) $F = P - C + 2$ D) $F = C - P + 2$

A) Fluorescence test B) Thalleioquin test C) Grahe test D) Vitali test

A) Syneresis B) Hysteresis C) Diapedesis D) Imbibition

I. Ethyl benzoate

III. Ethyl p-chlorobenzoate
IV. Ethyl p-nitrobenzoate

A) I > II > III > IV B) IV > III > II > I C) IV > III > I > II D) II > IV > I > III

P) Glycerin is used to pre-wet the bentonite prior to mixing with water to form its gel.

Q) Aqueous bentonite suspensions retain their viscosity above pH 6 but are precipitated by acids.

R) MgO increase gel formation while alcohol in significant amounts can precipitate bentonite

S) Bentonite exhibits rheopexy.

A) P and Q B) Q and R C) P, Q and R D) P, Q, R and S

Seeding involves the spread of cancer cells to:

A) blood vessels B) serous membranes of body cavities

C) fascia surrounding muscles and bones D) dermis and subcutaneum of the skin

Grape fruit juice is P-glycoprotein and CYP40 enzyme inhibitor. If drug X is degraded by proteolytic enzymes, administration of grapefruit juice with X :

A) increase bioavailability of X
B) decrease bioavailability of X
C) does not affect bioavailability of X
D) cause unexpected action of X

Tannins give positive test for all of the following EXCEPT:

P) Goldbeater skin test Q) Phenazone test

R) Biuret test

A) P and Q B) Q and R C) P, Q and R D) P, Q and S

Match the crude drug with its biological source.

1. Pale catechu P) *Conium maculatum*

2. Clove Q) *Cyamopsis tetragonoloba*

3. Guar bean R) *Uncaria gambir*

4. Hemlock S) *Syzygium aromaticum*

A) 1-Q, 2-P, 3-S, 4-R B) 1-Q, 2-S, 3-R, 4-P

C) 1-R, 2-S, 3-Q, 4-P

D) 1-R, 2-S, 3-P, 4-Q

Which of the following plot indicates the effect of antagonist on receptors?

A) Michaelis-Menten plots

B) Lineweaver Burk plots

C) Displacement plots

D) Schild plots

All of the following statements concerning zero-order degradation are true except:

A) Its rate is independent of the concentration.

B) A plot of conc. vs time gives a straight line on rectilinear paper and a slope is a rate constant

C) Its half-life is a changing parameter.

D) Its concentration remains unchanged with respect to time.

The liquefaction time of cocoa butter or hydrogenated vegetable oil based suppositories is:

A) 30-50 min

B) 30-40 min

C) 11-17 min

D) 3-7 min

Which of the following is most likely to undergo lysis?

A) A cell losing water from its cytoplasm.

B) A cell with an intact, multi-layer peptidoglycan cell wall.

C) A cell with disrupted pentaglycine bridges in its cell wall.

D) A cell with a hydrophilic outermost layer in its cell wall.

Match the drugs with the disease for which it is prescribed.

Column I

Column II

1. Bedaquiline

P) Antidiabetic

2. Sitagliptin

Q) Antiarrhythmic

3. Mexilitine

R) Antidepressant

4. Paroxetine

S) Antitubercular

A) 1-S, 2-P, 3-Q, 4-R

B) 1-S, 2-P, 3-Q, 4-R

C) 1-Q, 2-P, 3-R, 4-S

D) 1-R, 2-S, 3-P, 4-Q

Energy radiated by the black body at 55 C is in the range of :

A) UV

B) Visible

C) Infrared

D) Radio waves

A patient with severe anxiety and depression should avoid which of the following antidepressants?

A) Mirtazapine

B) Bupropion

C) Fluoxetine

D) Fluvoxamine

Time required to reach the steady state after a dosage regimen depends on:

A) Route of administration

B) Half life of a drug

C) Dosage interval

D) Dose of drug

What is rayon?

- A) Cellulose
- B) Regenerated cellulose
- C) Brand of polyester
- D) Genetically modified cellulose

What is mechanism of action of carbamazepine?

- A) Inhibitor of GABA transaminase activity
- B) Blockade of sodium channel
- C) Blockade of glutamate receptor
- D) Blockade of GABA receptors

What is the product of reaction of aldehyde with $K_2Cr_2O_7$?

- A) Alcohol
- B) Acetal
- C) Acid
- D) Peroxyacids

Clopidogrel is a:

- A) P2Y₁₂ receptor antagonist
- B) GP IIb/IIIa inhibitor
- C) Vitamin K antagonist
- D) None of the above

Which of the following titrations will always have an equivalence point at a pH > 7.00?

- A) weak acid with a weak base
- B) strong acid with a weak base
- C) weak acid with a strong base
- D) strong acid with a strong base

The range of absolute bioavailability is:

- A) 0 to 1
- B) 0 to 100
- C) -1 to 1
- D) -1 to 100

In what concentration is benzalkonium chloride normally used for preoperative skin preparation and treatment of minor wounds?

- A) 1:10
- B) 1:100
- C) 1:250
- D) 1:750

A pharmaceutical company plans to market a generic version of a drug whose patent has expired. Which type of documentation must be submitted to the FDA?

- A) IND
- B) NDA
- C) ANDA
- D) SNDA & Letter of intent

Which of the following is not used as enteric coating material?

- A) Cellulose acetate phthalate
- B) Pectin
- C) Acrylate polymers
- D) Polyvinyl acetate phthalate

For a particular drug, the rate of absorption but not the extent of the absorption of a from GIT, is affected by presence of food in GIT then taking the drug with food will result in a:

- A) Smaller area under the plasma drug concentration time curve
- B) Smaller maximal plasma drug concentration
- C) Smaller time at which the maximal plasma drug concentration occurs
- D) Smaller fractional bioavailability and total clearance

Barbiturates are being replaced by hypnotic benzodiazepines because of:

- A) Low therapeutic index
- B) Suppression in REM sleep
- C) High potential of physical dependence, abuse
- D) All of the above

Zona fasciculata of suprarenal gland produces:

- A) Minerelocorticoids
- B) **Glucocorticoids**
- C) Sex hormones
- D) Adrenaline

Magnesium sulfate BPC is also called as:

- A) Epsom salt
- B) **Gypsum salt**
- C) Plaster of Paris
- D) Glauber's salt (decahydrate)

All of the following statements about Plasmodium falciparum are correct EXCEPT:

- A) Trophozoites, Schizonts and gametocytes are not seen in peripheral blood smear.
- B) **is associated with recurrent relapses after initial treatment because of liver hypnozoites**
- C) More than one parasite/multiple infection can be seen within single RBC.
- D) causes more severe disease in pregnancy

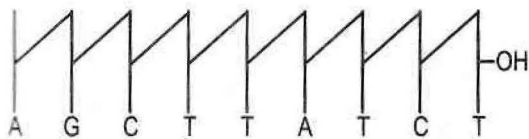
The Chairman of the Investigational New Drug (IND) Committee in India is

- A) **Drugs Controller General of India, Government of India**
- B) Secretary, Department of Health Research, Government of India
- C) Directorate General of Health Sciences, Government of India
- D) Secretary, Department of Biotechnology, Government of India

Adverse Drug Event reporting is the responsibility of all of the following EXCEPT

- A) Pharmacist and physician
- B) Manufacturer
- C) Consumer
- D) **Regulatory authorities**

The given oligonucleotide is



- A) **5' AGCTTATCT 3'**
- B) 3' AGCTTATCT 5'
- C) 5' PO₄- AGCTTATCT 3'-OH
- D) 3'OH-AGCTTATCT 5'-OH

Time dependent dilatant behavior is known as:

- A) Thixotropy
- B) **Rheopexy**
- C) Rheomalaxis
- D) Plastic

Which of the following are characteristic for colloid mills?

- P) Due to centrifugal forces, the mill undergoes periodical vibratory movement
- Q) Particles smaller than 1μm can be obtained with them
- R) **The main types of colloid mills are hammer, turbine and dial mills**
- S) The principle of their operation is based on the abrasion of particles at high speed

A) only P, Q, and R are correct

B) **only P and R are correct**

C) only Q and S are correct

D) P, Q, R and S are correct

Slugs are prepared in which kind of granulation technique?

A) Wet granulation

B) Dry granulation

C) Steam granulation

D) Melt granulation

What does it mean that a cell is polyploid?

A) **That is contains more than 2 copies of one or a few of its chromosomes**

B) That is contains more than 2 copies of a full set of homologous chromosomes

C) That is contains more than 2 copies of its sex chromosomes

D) That is contains more than 2 copies of its autosomal chromosomes

Match the causative agent with the disease

Column I

1. Bordetella pertussis

2. Mycobacterium leprae

3. Haemophilus influenzae

4. Rubella

Column II

P) Mumps

Q) Meningitis

R) Chancroid

S) Whooping cough

T) Hansen disease

A) 1- S, 2- T, 3-Q, 4-P

B) 1- T, 2- S, 3-R, 4-Q

C) 1- P, 2- R, 3-S, 4-T

D) 1- R, 2- P, 3-S, 4-T

The carbonyl stretching frequency for simple aldehydes, ketones, and carboxylic acids is about 1710 cm^{-1} , where as the carbonyl stretching frequency for esters is about _____ cm^{-1}

A) 1650

B) 1700

C) 1750

D) 1850

Which of these dienes can undergo the Diels-Alder reaction?

A) 1,3-Pentadiene

B) 1,4-Pentadiene

C) 1,2-Butadiene

D) 1,4-Cyclohexadiene

How many ^{13}C signals would 1,2-dimethylbenzene give?

A) 8

B) 7

C) 4

D) 3

Quinoline contains two basic rings. One of the rings is quinoline. It is attached to second ring via a one carbon bridge. Which is the second ring?

A) 8-Azabicyclo[3.2.1]octane

B) 1-Azabicyclo[2.2.2]octane

C) 1,4-Diazabicyclo[2.2.2]octane

D) Rubane

Which of the first drugs are potentiated by the second

A) Phenytoin - Ethinyl oestradiol

B) Warfarin - Phenobarbitone

C) Lithium - Thiazide diuretics

D) Bromocriptine - Metoprolol

Which of the following is a long-acting β_2 agonist that can be given by nebulization and as well as a dry powder inhaler for the treatment of COPD?

- A) Formoterol B) Albuterol C) Pulmicort D) Fluticasone

What is the source of electron in electron microscope:

- A) Mercury lamp B) Tungsten wire C) Both D) None of the above

Which of the following is not recommended in patients with renal insufficiency or cardiac dysfunction:

- A) Aloe B) Bisacodyl C) Isapghol D) Magnesium hydroxide

Which of the following is correct about parenteral nutrition?

- A) Parenteral nutrition solutions are hypertonic solutions and IV fluids are isotonic
B) Parenteral nutrition solutions and IV preparations are isotonic solutions.
C) Parenteral nutrition solutions are hypertonic solutions and IV fluids are isotonic
D) Parenteral nutrition solutions can be supplemented with medications

Which of the following is not included in immunization programme as per WHO recommendations for all children?

- A) BCG B) Oral polio C) Measels D) Typhoid

Match the given condition with appropriate drug used for its treatment.

- | | |
|---|---------------------------------------|
| 1. pernicious anemia | P. Erythropetin |
| 2. megaloblastic anemia | Q. Oprelvekin |
| 3. anemia associated with chronic renal failure | R. Parenteral Vitamin B ₁₂ |
| 4. thrombocytopenia due to cancer chemotherapy | S. Folic acid |

- A) 1- P, 2-Q, 3-R, 4-S B) 1- R, 2-S, 3-P, 4-Q
C) 1- R, 2-Q, 3-S, 4-P D) 1- R, 2-P, 3-S, 4-Q

Which one among the following is largest hip bone?

- A) Ischium B) Ilium C) Femur D) Calcaneus

Which enzyme is used by the HIV to form DNA in the host cell?

- A) Restriction endonuclease B) DNA-directed polymerase only
C) Reverse transcriptase only D) Both (B) and (C)

'Sparging' is the process where:

- A) silanol groups react with trimethylsilyl group
B) an inert gas is bubbled through the solvent reservoir to remove dissolved gases
C) solvents are mixed together in a fixed ratio
D) column is washed with solvents from nonpolar to polar order and reverse

Which of the following is not a plasticizer?

- A) Stearyl alcohol B) Triacetin C) Pullulan D) Castor oil

Specific rotation of glucose is:

- A) 111-112° B) 52-53° C) 18-19° D) 11-12°

Gelatin suppositories are — times denser than cocoa butter suppositories.

- A) 0.8 B) 1 C) 1.2 D) 2

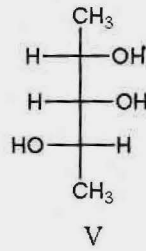
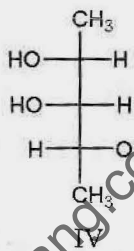
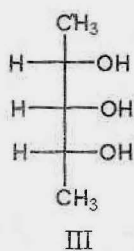
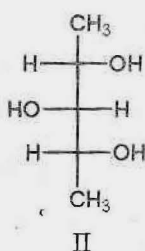
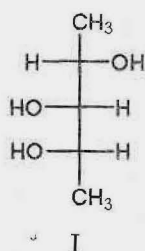
Match the drugs with their BCS class.

- | | |
|----------------|--------------|
| 1. Furosemide | P. Class I |
| 2. Cimetidine | Q. Class II |
| 3. Ketoprofen | R. Class III |
| 4. Propranolol | S. Class IV |
- A) 1-Q, 2-P, 3-S, 4-R B) 1-S, 2-P, 3-Q, 4-R
- C) 1-R, 2-S, 3-Q, 4-P D) 1-S, 2-R, 3-Q, 4-P

Higuchi model is applicable to drug that is — in the formulation.

- A) Dissolved in formulation B) Dispersed in formulation
- C) Chemically bound to carrier in formulation D) Osmotically controlled in the formulation

Which structure(s) represent(s) diastereomer(s) of I?



- A) II and III B) II and IV C) III and V D) IV and V

Callus culture is:

- A) Solid B) Semisolid C) Liquid D) Suspension

About 95% of transdermal drugs enter the skin through the which pathway?

- A) Intercellular B) Transcellular C) Follicular D) Eccrine

Each of the following is a glycosaminoglycan EXCEPT one. Which one is exception?

- A) Chondroitin and dermatan B) Heparan and heparin
- C) Hyaluronic acid and keratan D) Keratin and chitin

Characteristics feature of hemorrhagic dengue fever is:

- A) Reduction in platelet count B) Reduction in RBC count

- C) Reduction in coagulation factors
- D) Increased RBC

Polarographic method of analysis to obtain individual amounts of Cu^{2+} and Cd^{2+} in a given mixture of the two ions (Cu^{2+} and Cd^{2+}) is achieved by measuring their

- A) half-wave potentials
- B) migration currents
- C) decomposition potentials
- D) diffusion currents

Consider the reaction: $\text{A} + \text{B} \rightleftharpoons \text{C}$

The unit of the thermodynamic equilibrium constant for the reaction is

- A) mol L^{-1}
- B) L mol^{-1}
- C) $\text{mol}^2 \text{L}^{-2}$
- D) dimensionless

Match compounds with the pathway they inhibit.

1. Vancomycin

2. Rifampin

3. Puromycin

4. Ciprofloxacin
- P) Folate metabolism

Q) DNA synthesis

R) Protein synthesis

S) RNA synthesis

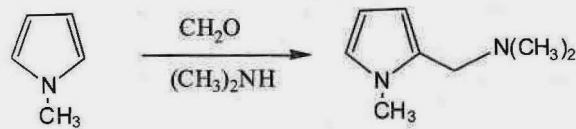
T) Cell wall synthesis
- A) 1- T, 2- S, 3-R, 4-Q

B) 1- R, 2- S, 3-T, 4-P

C) 1- Q, 2- R, 3-T, 4-Q

D) 1- T, 2- Q, 3-P, 4-S

The given reaction is an example of:



- A) Arndt-Eistert homologation
- B) Mannich reaction
- C) Michael addition
- D) Chichibabin amination reaction

Match the following plant sources with their secondary metabolites and medical uses

Source plant	Secondary metabolites	Medical use
1. Belladonna	P) Menthol	a) Cancer treatment
2. Foxglove	Q) Atropine	b) Heart disease
3. Pacific yew	R) Digitalin	c) Eye examination
4. Eucalyptus	S) Taxol	d) Cough
A) 1-Q-c, 2-R-b, 3-S-a, 4-P-d		B) 1-R-c, 2-Q-a, 3-P-d, 4-S-b
C) 1-Q-c, 2-S-b, 3-P-a, 4-R-d		D) 1-P-b, 2-S-c, 3-Q-d, 4-R-a

Which of the following causes arterial and bronchial constriction and platelet aggregation:

- A) Prostaglandin E_2
- B) Prostaglandin $\text{F}_{2\alpha}$
- C) Prostaglandin D_2
- D) Thromboxane A_2