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(3rd YEAR, VI SEM.) EXAMINATION

B.PHARM.

PHARMACEUTICAL CHEMISTRY-VII

(Medicinal Chemistry-II)

Time : 3 Hours]

[Max. Marks : 70

Note: Attempt all question as per Instructions. Draw well labeled diagram wherever necessary.

1. Attempt All questions :

[1×14=14

- (i) Starting material of mefenamic acid (Synthesis):
 - (a) 2-bromo benzoic acid
 - (b) Benzoic acid
 - (c) 2-thiazol
 - (d) Triazine
- (ii) Starting material of Diclofenac synthesis
 - (a) 2,6-dichlorodiphenylamine
 - (b) Aniline
 - (c) a and b both
 - (d) None
- (iii) Promethazine is a
 - (a) H-1 antagonist
 - (b) H-2 antagonist
 - (c) M-1 antagonist
 - (d) M-2 antagonist
- (iv) Drug used in hypertension:
 - (a) Captopril
 - (b) Warfarin
 - (c) Ibuprofen
 - (d) Cetrizine
- (v) Promethazine is a
 - (a) Tricyclic compound
 - (b) Dicyclic compound
 - (c) a and b both
 - (d) None

- (vi) H-1 antagonist
 (a) Ranitidine (b) Promethazine
 (c) Cetirizine (d) Bihenhidramine
- (vii) Warfarin belongs to :
 (a) Anticoagulant (b) Antihypertensive
 (c) Antianginal (d) All of the above
- (viii) Aldosterone hormone antagonist :
 (a) Acetazolamide (b) Chlorothiazide
 (c) Spironolactone (d) All
- (ix) Which of the following is a starting material for synthesis of Methotrexate:
 (a) Guanine (b) Pyrimidine
 (c) a and b both (d) None
- (x) In QSAR equation $\log P$ denotes:
 (a) Lipophilicity of drug (b) Electronic factors
 (c) Polarity (d) All
- (xi) Nalidixic acid is
 (a) Quinolone derivative (b) Sulfonamide derivative
 (c) Amide derivative (d) Ester derivative
- (xii) Starting material of Aspirin :
 (a) Acetic anhydride (b) Salicylic acid
 (c) Benzoic acid (d) Folic acid
- (xiii) Acetazolamide inhibit:
 (a) Carbonic anhydrase (b) DN?A gyrase
 (c) Na^+ Channel (d) Na^+ - Cl^- channel
- (xiv) Autocoids means:
 (a) Local hormone (b) Hormone
 (c) Both a and b (d) None

2. Attempt any four questions of the following. [3.5×4=14]

- Give the Synthesis, MOA and use of Acetazolamide.
- Give the Synthesis, MOA and use of 5-fluorouracil.
- Give the synthesis, MOA and use of Promethazine
- Give the SAR of Quinolones.
- Classify antihypertensive agents.

3. Attempt any two questions of the following. [7×2=14]

- What is the H₂ antagonist? Give the synthesis and used of Ranitidine and Famotidine.
- What is Lead compound? Discuss steps involved in drug discovery.
- Write notes on Cardiotonics.

4. Attempt any two questions of the following. [7×2=14]

- Give synthesis, S.A.R, MOA and use of Sulfamethoxazole.
- Explain QSAR equation and their application.
- Give the synthesis of following drugs:
 (a) Methyldopa (b) Nifedipine

5. Attempt any One of the following: [14×1=14]

- Explain and classify Antibacterial agents. Give the synthesis, SAR, MOA and use of Nalidixic acid
- What is the antineoplastics agent? Give the synthesis, MOA, use of Methotrexate and Chlorambucil.

- (vi) Elastomer used in rubber stopper formulation is
 (a) Polybutadiene (b) Butyl stearate
 (c) Titanium dioxide (d) Butylated hydroxyl toluene
- (vii) Iso electric pH of type A gelatin:
 (a) 4.7 (b) 7
 (c) 8 (d) 9
- (viii) This is not a film defect in tablets:
 (a) Sticking (b) Orange peel effect
 (c) Roughness (d) All of the above
- (ix) In dissolution test temperature of medium in flask is maintained at
 (a) $37^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$ (b) $37^{\circ}\text{C} \pm 2^{\circ}\text{C}$
 (c) $35^{\circ}\text{C} \pm 2^{\circ}\text{C}$ (d) $35^{\circ}\text{C} \pm 1^{\circ}\text{C}$
- (x) In capsules, ROTOSORT is used for :
 (a) Filling powders (b) Filling liquids
 (c) Filling pellets (d) Sorting of filled capsules
- (xi) The Wurster process can be used to
 (a) Coat tablets (b) Determine the DT
 (c) Gas sterilize parenteral solutions (d) Automatic filling of capsules
- (xii) Bandage is _____ wound dressing
 (a) Primary (b) Secondary
 (c) Composite (d) All of the above
- (xiii) The ingredient which improves the flow property of granules is
 (a) Emollient (b) Glidant
 (c) Lubricant (d) Surfactant

- (xiv) Green (fresh) bones are used for the preparation of gelatin of the type:

- (a) A (b) B
 (c) C (d) A and B

2. Attempt any four questions of the following. [3.5×4=14]

- (i) Discuss the advantages and disadvantages of capsule over other dosage forms.
 (ii) Write a note on in vitro dissolution study of sustained release dosage form.
 (iii) Write a note on official dressings.
 (iv) Classify coated and uncoated tablets.
 (v) Write the importance of microencapsulation in pharmacy.

3. Attempt any two questions of the following. [7×2=14]

- (i) Write a note on microencapsulation by phase co-acervation separation.
 (ii) Enlist the different granulation technique and explain any one technique.
 (iii) Discuss the various quality control test for parenteral products.

4. Attempt any two questions of the following. [7×2=14]

- (i) Discuss in detail about primary and secondary wound dressings.
 (ii) Write a note on film forming and describe the equipment used for coating.
 (iii) Give the evaluation test for packaging.

5. Attempt any two of the following:

[7×2=14]

- (i) Give the physiological parameters considered while the formulation of parenteral products.
- (ii) Enlist the components of tablets, indicating the role of each ingredient.
- (iii) Discuss glass and plastics containers used for pharmaceutical products.

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B.PHARM.

(3rd YEAR, VI SEM.) EXAMINATION

PHARMACOLOGY-II

Time : 3 Hours]

[Max. Marks : 70

Note: Attempt all question as per Instructions.

1. Attempt All questions :

[1×14=14

- (i) All of the following agent belonging to cardiac glycoside except
- | | |
|----------------|--------------------|
| (a) Digoxin | (b) Strophanthin K |
| (c) Dobutamine | (d) Digitoxin |
- (ii) Aglycone is essential for
- | | |
|----------------------------|----------------|
| (a) Plasma protein binding | (b) Half life |
| (c) Cardiotonic action | (d) Metabolism |
- (iii) In absence seizure which drug is used
- | | |
|---------|----------|
| (a) LOW | (b) HIGH |
| (c) | (d) |
- (iv) In absence seizure which drug is used
- | | |
|------------------|----------------------|
| (a) Valproate | (b) Ethosuximide |
| (c) Trimethadone | (d) All of the above |
- (v) Which drug is free from morphine like side effect
- | | |
|-----------------|---------------|
| (a) Meptazinol | (b) Methadone |
| (c) Pentazocine | (d) Etorphine |
- (vi) Dissociative anesthesia is caused by
- | | |
|---------------|---------------|
| (a) Propofol | (b) Halothane |
| (c) Etomidate | (d) Ketamine |
- (vii) Choose the correct class IV anti-arrhythmic that is primarily indicated for the treatment of supra ventricular tachyarrhythmias
- | | |
|----------------|---------------|
| (a) Mexiletine | (b) Diltiazem |
|----------------|---------------|

- (viii) Lithium toxicity caused by
 (a) Loop diuretics (b) Osmotic diuretics
 (c) Carbonic anhydrase inhibitors (d) All of the above
- (ix) Sildenafil is used for treatment of one of the following disorders:
 (a) Systolic hypertension (b) Unstable angina
 (c) Pulmonary hypertension (d) Hypertension due to eclampsia
- (x) The drug act at the proximal tubules
 (a) Loop diuretics (b) Thiazide diuretics
 (c) Potassium diuretics (d) Carbonic anhydrase inhibitor
- (xi) An angiotensin -II receptor blocker useful in treating hypertension
 (a) Enalaprilat (b) Valsartan
 (c) Atenolol (d) Amlodipine
- (xii) Clinical jaundice, typified by yellowing of the tissues in associated with elevated levels of
 (a) Serum lysozyme (b) Serum bilirubin
 (c) Serum creatinine (d) Serum - Glutamyl transferase
- (xiii) A cardio selective beta blocker with vasodilating properties is
 (a) Pindolol (b) Atenolol
 (c) Bisoprolol (d) Nebivolol
- (xiv) Acetazolamide act at this nephron site
 (a) Proximal convoluted tubule (b) Ascending thick limb of loop of henle
 (c) Distal convoluted tubule (d) Collecting duct

2. Attempt any four questions of the following. [3.5×4=14]

(Enlist category, mechanism of action, adverse effects and uses)

- (i) Allopurinol
- (ii) Misoprostol
- (iii) Sucralfate
- (iv) Captopril
- (v) Domperidone
- (iv) Ondansetron

3. Attempt any two questions of the following. [7×2=14]

- (i) Write a detailed note on Vit. K as Coagulant.
- (ii) Explain the rationale of below mentioned combinations
 - (a) Pantoprazole + Domperidone
 - (b) NSAID + H₂ antihistaminics
- (iii) Explain synthesis, storage and destruction of Serotonin

4. Attempt any two questions of the following. [7×2=14]

- (i) Classify Non specific antidiarrhoeal agents and explain the pharmacology of sulfasalazine.
- (ii) Define Haematinics and write a note on iron as Haematinics.
- (iii) Explain the pharmacology of drug showing positive inotropic, clonotropic, Bathmotropic and chronotropic effects.

5. Attempt any One of the following: [14×1=14]

- (i) What do you understand by Angina pectoris, different forms of angina classify anti angina agents with detailed pharmacology of Nitrates.
- (ii) Classify antiemetics with detailed pharmacology of Metoclopramide.

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B.PHARM.
(3rd YEAR, VI SEM.) EXAMINATION
PHARMACOGNOSY-III

Time : 3 Hours]

[Max. Marks : 70

Note: Attempt all question as per Instructions. Each question carries equal marks.

1. Attempt All questions :

[1×14=14

- (i) Liquorice contains:
- | | |
|----------------------------|-----------------------|
| (a) Saponin Glycoside | (b) Cardiac Glycoside |
| (c) Antraquinone Glycoside | (d) Flavonoids |
- (ii) Anthraquinones are present in
- | | |
|---------------|--------------|
| (a) Digitalis | (b) Seena |
| (c) Ginseng | (d) Psoralia |
- (iii) Which drug is used as nervine tonic:
- | | |
|------------|-------------|
| (a) Brahmi | (b) Gokhru |
| (c) Neem | (d) Saffron |
- (iv) Ginsenosides present in
- | | |
|-----------------|-------------|
| (a) Panax | (b) Yam |
| (c) Devils dung | (d) Kalmegh |
- (v) Drug used as Hepatoprotective
- | | |
|-------------|-------------|
| (a) Visnaga | (b) Gentain |
| (c) Aloe | (d) Kalmegh |
- (vi) Killer-Killani chemical test used for :
- | | |
|-----------------------|-------------------|
| (a) Flavone | (b) Anthraquinone |
| (c) Cardiac Glycoside | (d) Saponin |

(vii) Modified Borntrager's test is used for identification of

- (a) Rhubarb
- (b) Tulsi
- (c) Dioscorea
- (d) Quassia

(viii) Crocin is responsible for :

- (a) Odour
- (b) Taste
- (c) Colour
- (d) Fragrance

(ix) Paracytic stomata are present in powder of :

- (a) Datura
- (b) Colve
- (c) Senna
- (d) Gymnema

(x) Liquorice contains:

- (a) Saponin glycoside
- (b) Cardiac Glycoside
- (c) Anthraquinone glycoside
- (d) Flavonoids

(xi) Punarnava used in

- (a) Gonorrhoea
- (b) Liver disease
- (c) Cardiac disease
- (d) Cold

(xii) Gugul is a gum resin of obtain from the bark of :

- (a) Commiphora molmol
- (b) Commiphora mukul
- (c) Commiphora abyssinica
- (d) Commiphora indica

(xiii) Centella asiatica is a source of

- (a) Rasna
- (b) Arjuna
- (c) Shilajit
- (d) Brahmi

(xiv) Podophyllotoxin is present in:

- (a) Kalmegh
- (b) Brahmi
- (c) Picorhiza
- (d) Podophyllum

2. Attempt any four of the following: [3.5×4=14]

Give biological source chemical constituent and uses of the following drugs:

- (i) Ginseng
- (ii) Squill
- (iii) Gentian

(iv) Rhubarb

(v) Majith

3. Attempt any two of the following: [7×2=14]

- (i) Write short note on Saponin glycosides and discuss the Pharmacognosy of Dioscorea.
- (ii) Write short note on Arishtas and Asavas.
- (iii) Give the isolation and identification test of Sennosides.

4. Attempt any two of the following: [7×2=14]

- (i) Write the principle of Ayurveda. Give the formulation and standardization of Bhasma.
- (ii) Discuss the utilization and production of Solasodine.
- (iii) Give the preparation for lyhyas the Tailas.

5. Attempt any One of the following: [14×1=14]

Give the biological source, cultivation collection, macroscopy, microscopy, commercial varieties chemical constituent adulterant and uses of the following drugs (any two)

- (i) Liquorise
- (ii) Ammi Majus

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B.PHARM.

(3rd YEAR, VI SEM.) EXAMINATION

ENVIRONMENT AND ECOLOGY

Time : 3 Hours]

[Max. Marks : 70

Note: Attempt all question as per Instructions. Draw well labeled diagram wherever necessary.

1. Attempt All questions :

[1×14=14

(i) Pollution measure by

(a) AQI

(c) PQI

(b) JQI

(d) KQI

(ii) Pollution measurement unit

(a) $\mu\text{g}/\text{m}^3$ (c) $\mu\text{g}/\text{m}^2$ (b) $\mu\text{g}/\text{m}^1$

(d) None of these

(iii) Environment nature resources has types.

(a) 2

(c) 3

(b) 4

(d) 5

(iv) Is natural resources used in domestic purposes?

(a) Yes

(c) No

(b) Both a and b

(d) None of these

(v) Competition for light, nutrients and space is most severe between.

(a) Closely related organism growing in different niches (c) Closely related organisms growing in the same area/inche

(b) Distantly related organisms growing in the same habitat (d) distantly related organisms growing in different inches.

(vi) Upper part of sea/aquatic ecosystem contains.

- (a) Plankton (c) Nekton
- (b) Plankton and nekton (d) Benthos

(vii) What is true of ecosystem?

- (a) Primary consumers are least dependent upon producers
- (c) Primary consumers outnumber producers
- (b) Producers are more than primary consumers
- (d) Secondary consumers are the largest and most powerful.

(viii) In an ecosystem, which one shows one-way passage?

- (a) Free energy (c) carbon
- (b) Nitrogen (d) Potassium

(ix) Soil conservation is

- (a) Conversion of sterile soil into fertile one
- (c) Aeration of soil
- (b) erosion of soil (d) protection against loss

(x) Deforestation will decrease

- (a) Soil erosion (c) Soil fertility
- (b) landslides (d) rainfall

(xi) Pyramid of numbers in a grassland/ tree ecosystem

- (a) always inverted (c) always upright
- (b) both a and b (d) spindle-shaped

(xii) Petroleum is a

- (a) synthetic product (c) renewable resource
- (b) non-renewable resource (d) inconvenient resource

(xiii) Most hazardous metal pollutant of automobile exhausts is

- (a) mercury (c) cadmium
- (b) lead (d) copper

(xiv) Ecology deals with the study of

- (a) Living beings (c) Living and non living compounds
- (b) Environment (d) None

2. Attempt any four questions of the following. [3.5×4=14]

- (i) The multidisciplinary nature of environment studies.
- (ii) Natural resources and its classification
- (iii) Biodiversity and its conservation
- (iv) Provisions applicable to drugs and cosmetic
- (v) Concept of ecosystem and its types.

3. Attempt any two questions of the following. [7×2=14]

- (i) Air prevention and control of pollution act 1987
- (ii) Water prevention and control of pollution act 1974
- (iii) Discuss equitable use of resources for sustainable life cycle?

4. Attempt any two questions of the following. [7×2=14]

- (i) What is soil pollution? Explain its causes and control measures?
- (ii) Describe noise pollution, its causes and control measures?
- (iii) Explain in detail about thermal pollution with causes and control measures.

5. Attempt any One of the following: [14×1=14]

- (i) Define the term Environment, environmental pollution and hazardous substances under the environment protection act?
- (ii) What are the provisions applicable to drugs and cosmetics under the environmental protection act?
- (iii) Discuss the methods of disposal of biomedical waste.