T.Y. B.Pharm sem-VI (CBSGS) 19/04/17
Sub - PC - II

Q.P. Code :01007

[Time: 3 Hours] [Marks: 70]

Please check whether you have got the right question paper.

N.B: 1. **All** questions are **compulsory**.
2. Write structures wherever necessary.

Q. 1 Answer the following. Question 1 – 13 carry one mark each and question 14 carries 2 marks. **15**

1. Name a viral enzyme and it's inhibitor
2. List the forces that stabilize the tertiary structure of a protein.
3. Give one example of post-translational modification of protein.
4. If in the presence of inhibitor, both Km and Vmax decrease, identify the type of enzyme-inhibition.
5. How are Van der Waals interactions different from typical dipole-dipole interactions?
6. Give an example of a functional group that can act both as hydrogen bond donor and hydrogen bond acceptor.
7. Give an example of a ligand-gated ion channel receptor.
8. The DNA backbone is made up of ..... Bonds.
9. Name a Phase – II reaction that leads to the formation of mercapturic acid derivatives.
10. Name a class of drugs that form a covalent bond with DNA. Give an example.
11. Give an example of "Hydrolysis" as a biotransformation pathway.
12. "SAR- a tool for drug development". Comment.
13. Protein binding can prolong the drug's duration of action. Explain.
14. Nucleic acids can be "drug targets" as well as "drugs". Give suitable examples.

Q. 2 A) Enlist any four intermolecular forces and elaborate on Van der Waals interaction. **04**

B) With respect to SAR of penicillin, state whether the following statements are True or False, correct if false. **03**

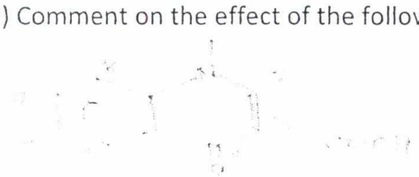
i. Introduction of electron releasing group at α-carbon increases the acid stability.
ii. Increasing steric hindrance at α –carbon decreases the β – lactamase stability.
iii. Introduction of a polar group at α –carbon broadens the spectrum of activity

C) i. Proteins can be drugs as well as drug targets. Explain. **02**

ii. Give the structure and generic name of a sulphonamide used for ulcerative colitis. **02**

Q. 3 A) Enlist different types of receptors and discuss "Kinase-receptors". **04**

B) i) Comment on the effect of the following changes on the core nucleus drawn below:- **02**

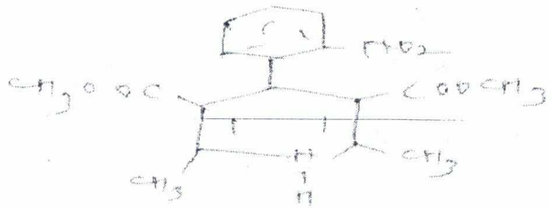


a) Introduction of a cyclopropyl group at position -1.
b) Introduction of a fluoro– moiety at position – 8.

B) ii) Explain the term 'Tolerance'. 01

C) Discuss SAR features of Cinchona Alkaloids as Antimalarial Agents. 04

Q. 4 A) i. Predict any two phase – I metabolites for the given molecule 02



ii. Name any four oxidative metabolic reactions. 02

B) Outline the synthesis for cloxacillin. 03

OR

B) Give the structure and generic name for **(any three)** of the following 03

i. A β – lactamase inhibitor

ii. A Monobactam

iii. A parenteral cephamycin

iv. Degradation product of tetracycline

C) i. Briefly discuss "Bioisosterism" with suitable example 02

ii. Deduce the structure for "5 – amino 1 - cyclopropyl -7 -(3, 5 – dimethyl- 1 – piperazinyl) 6,8 – difluoro 1,4 – dihydro – 4 - oxo quinoline -3- carboxylic acid 01

iii. Write the structure for a drug used in the treatment of trypanosomiasis. 01

Q. 5 A) Enlist the structural features of macrolide antibiotics and add a note on mechanism of action. 03

B) Outline the synthesis of Ethambutol **OR** PAS along with reagents and reaction conditions. 03

C) Explain the chemical features of artemisinin derivatives. Give structure of one hydrophilic and one lipophilic derivative. 03

D) Give the structure and use of Tinidazole. 02

Q. 6 A) Write a short note on Allylamine class of Antifungal agents. 04

B) Outline the synthesis by giving reaction conditions and reagents for synthesis of Dapsone **OR** ciprofloxacin. 03

C) i. Sulfamethoxazole and Pyrimethamine is a combination used in treatment of Malaria. Justify. 02

C) ii. Name the Enzymes inhibited by 02

a) Miconazole

b) Norfloxacin

B.Pharm, sem-VI (CBSGS) 25/04/17
Sub - PA-II

Q.P. Code :02684

[Time: 3 Hours] [Marks:70]

Please check whether you have got the right question paper.

N.B:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat labeled diagram wherever necessary.

Q.1 a) Answer the following (Any five). 5M

i. Name any two detectors used in colorimeters.
ii. Write the equation indicating relation between absorbance and transmittance.
iii. Give any two examples of auxophores
iv. Write wave number ranges of the three regions of IR radiations
v. How is wavelength maxima of a compound determined?
vi. Define specific activity of a radionuclide.

b) Answer the following (Any five) 10M

i. Explain the term bathochromic shift with the help of a suitable diagram.
ii. Comment on sensitivity of fluorimetric analysis as compared to that of UV-Visible spectroscopic analysis.
iii. With the help of a suitable example explain the term cationic interference in flame photometry.
iv. Explain absorption filters.
v. Define the terms Relative Biological Effectiveness and Gray in radiochemistry.
vi. Comment on the significance of Cut off wavelength of solvents in UV-visible spectroscopy.

Q.2 a) Answer the following (Any two) 8M

i. Name two sources used in
   i) UV-Visible spectroscopy
   ii) IR Spectroscopy.
   Explain one source used in IR spectroscopy in detail.
ii. Give four points of difference between Infrared and Raman Spectroscopy.
iii. With the help of a diagram explain various types of scattering in Raman Spectroscopy

b) Write a note on Isotope Dilution Analysis. 3M

Q.3 a) Answer the following (Any two) 8M

i) What is atomic spectroscopy? Give principle involved in atomic absorption Spectroscopy. Draw a neat labeled diagram of atomic absorption Spectrophotometer.
ii) With the help of a TG curve discuss principle of thermo gravimetric analysis. Enlist any four factors affecting the TG curve.
iii) Write a note on applications of Near IR spectroscopy

b) Explain the term overtone bands in IR spectroscopy. 3M

Turn Over

Q.4 a) Answer the following (any two) 8 M

i) State and derive Beer Lambert's law

ii) Fixed dose of vitamin B12 was given every fourth week to six patients. The content of Hemoglobin in these patients observed before and after treatment was as follows

Hemoglobin %

Before	After
12.2	13
11.3	13.4
14.7	16
11.4	13.6
11.5	14
12.7	13.8

State whether there is significant difference in the % Hemoglobin before and after therapy at 5% significance. [Tabulated t-value at 5 degrees of freedom for $\propto = 0.05$ is 2.57].

iii) The following molarities were calculated from replicate standardization of NaOH solution. 0.526, 0.5029, 0.5023, 0.5031, 0.5025, 0.5232, 0.5027, 0.5026, 0.5212. Assuming no determinate errors, within what range are you 95% certain that the true value of molarity falls? The corresponding t-value for 8 degrees of freedom is 2.306.

b) How do DTA and DSC techniques differ from each other? Give any one application of each of them. 3M

Q.5 a) Answer the following (Any two) 8M

i) With the help of an energy level diagram explain the terms singlet state and triplet state.

ii) Enlist different types of quenching in fluorescence spectroscopy with one example of each.

iii) Explain the standard curve method in UV- visible spectroscopy for assay of single component formulation.

iii) Explain the terms linear regression and correlation coefficient.

b) Explain Miller's indices. Give three applications of x-ray diffractometry. 3M

Q.6 a) Answer the following (Any two). 8M

i) Draw a block diagram of a spectrofluorimeter. Mention role of each of its components.

ii) Discuss principle of sample handling in IR spectroscopy with ATR technique.

iii) Write a note on FTIR spectrophotometer.

b) Calculate concentration of a drug in given solution if absorbance measured at 284 nm in 1cm cell was 0.795. Molar absorptivity of the drug is 1.75×10^4 and molecular weight of the drug is 200. Express the concentration in micrograms per ml. 3M

T.Y.B. Pharm, Sem-VI (CBSGS) 02/05/17
Sub - Pharmaceutics-III

Q.P. Code :04949

[Time: 3 Hours] **[Marks:70]**

Please check whether you have got the right question paper.

N.B:
1. **All** questions are **compulsory**.
2. **Draw neat labeled diagrams wherever necessary.**

Q.1	a)	Discuss the criteria for selection of suitable tablet excipients.	**2**
	b)	Elaborate on the disintegration test of enteric film coated tablets.	**2**
	c)	Give the desirable features of aerosols.	**2**
	d)	Discuss the various types of aerosol systems.	**2**
	e)	Why are mixtures of gelatin used in hard gelatin capsule shells?	**2**
	f)	State the mechanism of starch as a disintegrating agent.	**2**
	g)	List four ideal properties of packaging materials for capsules.	**1**
	h)	Explain in brief, dispersible tablets	**2**
Q.2	a)	What is picking and sticking during tablet compression? Give its causes and remedies.	**4**
	b)	Discuss in brief, the various packaging materials used in blister packing of solid oral dosage forms.	**4**
	c)	Discuss powder formulations for pharmaceutical aerosols.	**3**
Q.3	a)	Elaborate on raw materials used in sugar coating of tablets.	**4**
	b)	What are capsules? State the applications and limitations of capsules as a dosage form.	**3**
	c)	Discuss the various parts of a pharmaceutical aerosol container with a suitable diagram.	**4**
Q.4	a)	Discuss, in details the physics of tablet compression.	**4**
	b)	Discuss the large scale manufacturing of soft gelatin capsules.	**4**
	c)	Explain the particle size determination and spray pattern testing of aerosols.	**3**
Q.5	a)	Describe the preformulation studies carried out during development of tablets.	**4**
	b)	Discuss fluidized bed coating in brief.	**3**
	c)	Classify the capsule filling equipments. Discuss in brief, the excipients used in formulation of hard gelatin capsules.	**4**
Q.6	a)	Elaborate on wet granulation technique during manufacture of tablets discussing the advantages and drawbacks of the same.	**4**
	b)	Write a note on enteric film formers.	**4**
	c)	Discuss the quality control tests for hard gelatin capsules.	**3**

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09/05/17

Q.P. Code : 03573

[Time: 3 Hours] **[Marks:70]**

Please check whether you have got the right question paper.

N.B:
1. **All** questions are **compulsory**.
2. **Illustrate** answers with **sketches and structures** wherever required.
3. **Answers** to **sub questions** must be **written together.**

1. (a) State **True or False** and justify all the following statements with suitable examples:- **7**
   - i) Papain is an example of an organized crude drug.
   - ii) Gibberlins are plant growth inhibitors.
   - iii) *Digitalis purpurea* has entire leaf margin.
   - iv) Chloral hydrate is used as a mountant in microscopic preparations.
   - v) Coumarins are biosynthesized via acetate mevalonate pathway
   - vi) Ferric chloride reagent is used for identification of tannins
   - vii) Xanthan gum is obtained by process of gummosis

   (b) Answer the following:- **8**
   - i) Write any two exmaples of alkaloidal class of phytoconstituents with relevant chemical structures and therapeutic applications
   - ii) Write a note on any one regenerated fibre.
   - iii) Give a brief account of ricin
   - iv) With the help of suitable examples differentiate between endospermic and nonendospermic seeds.

2. i) Compare and contrast alphabetical and morphological methods of classification of crude drugs. **4**
   ii) Illustrate with suitable labelled diagrams, the salient historical features of dorsiventral and isobilateral leaves. **4**
   iii) Give source and commercial utility of inulin and malt. **3**

3. i) State the principle of counter current extraction with applications. **4**
   ii) Write source, preparation, chemistry and commercial utility for absorbent and nonabsorbent cotton. **4**
   iii) Highlight the significance of aflatoxins and pesticide residues evaluation as per WHO guideliness **3**

4. i) Write in detail about exogenous and endogenous factors affecting quality of crude drugs. **4**
   ii) Outline the general methods of extraction of glycosides and tannins **4**
   iii) Explain the scope of pharmacognosy in traditional and complementary systems of medicine. **3**

[Turn Over]

Q.P. Code : 03573

5.	i)	Write in detail about modifications of stem.	4
	ii)	Give pharmacognostic account of agar	4
	iii)	With the help of suitable examples, differentiate between adulteration and substitution of crude drugs.	3
6.	i)	Outline the biosynthetic pathway of alkaloid precursor molecules, with structures.	4
	ii)	Give Sources, preparation and uses of thyroid hormones and pepsin	4
	iii)	Write a note on preparation of crude drugs	3

Date : 12/05/17 Sub : HPDSM

Sem VI Exam : First half 2019

Q.P. Code :02281

[Time: Three Hours] [Marks:70]

Please check whether you have got the right question paper.

N.B: 1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat labelled diagrams wherever applicable.

Q.1 a) Elaborate on composition and functions of PTC. 04

b) Define Hospital formulary and comment on its significance. 03

c) Elaborate on dispensing systems to in patients. 03

d) Write note on wheel chairs and canes. 02

e) Explain Legal requirements to start a drug store. 03

Q.2 a) Classify Hospitals. 02

OR

Explain organizational structure of hospitals. 02

b) Explain concept of pharmaceutical care. 02

c) Discuss in detail dispensing of habit forming drugs. 04

d) What precautions should be taken to avoid medication errors in hospitals? 03

Q.3 a) Explain code of ethics for pharmacist in relation to job. 02

OR

'Is pharmacy trade or profession'? Justify. 02

b) Discuss various channels of distribution of pharmaceuticals. 03

c) Elaborate the importance of various sales promotion methods. 04

d) Elaborate on specific functions of purchasing. 02

Q.4 a) Define 'Hospital pharmacy.' Enlist sources of finances for hospital. 02

b) Comment on need of hospital pharmacy procedural manual. 03

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