

JSS UNIVERSITY, MYSURU
Fourth Year Pharm.D Examination - April/May 2017

Subject: Pharmacotherapeutics- III

*Note: Draw neat labeled diagrams wherever necessary.
 Your answer should be specific to the questions asked.*

Time: 3 hours

Max. Marks: 70

I. LONG ESSAY (Answer any TWO questions)

**2x15=30
Marks**

1. Mr. KP is a 34 year old civil engineer in a construction company. He usually smokes around 15- 20 cigarettes per day. He drinks coffee about 4-6 times a day. Recently he started to feel intense stomach pain, he also experienced one episode of vomiting containing food particles. He immediately visited a gastroenterologist, who performed an endoscopy and diagnosed the condition as gastro-oesophageal reflux disease (GERD). (7+8)
 - a) Explain the aetiology and their mechanisms in inducing GERD. What are the counseling points you would advise Mr. KP with respect to lifestyle modifications?
 - b) Explain the diagnosis and treatment of GERD.
2. a) Classify schizophrenia. Write the clinical features of any two types. (7+8)
 b) Write a note on electro-convulsive therapy and explain the pharmacological treatment of schizophrenia.
3. a) Explain about the clinical features and pathogenesis of alcoholic liver disease (ALD). (7+8)
 b) Explain the treatment of portal hypertension and ascites.

II. SHORT ESSAY (Answer any SIX questions)

6x5=30 Marks

4. Define narcolepsy. Explain the symptoms, diagnosis and treatment of narcolepsy.
5. Explain the pharmacotherapy of ulcerative colitis.
6. Write the doses and percentage of iron in oral iron preparations. What is the importance of transferrin and total iron binding capacity?
7. Explain the drugs used in the treatment of ischemic stroke.
8. Explain the clinical features and pharmacotherapy of migraine headache.
9. Define anxiety. Explain the clinical features and treatment of panic disorder.
10. Explain two types of drug induced liver diseases with suitable examples.
11. Explain the pharmacotherapy of Alzheimer's disease.

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III. SHORT ANSWERS (Answer any FIVE questions)

5x2=10 Marks

12. Write a note on pathogenesis of Parkinson's disease.
13. Clinical features of alcoholic cirrhosis.
14. List the major risk factors for development of stroke.
15. List the drugs used in treatment trigeminal neuralgia and write the adult dose for any two drugs with their common adverse drug reactions.
16. Explain the clinical features and treatment of hepatitis B.
17. Explain the mechanisms of drug induced agranulocytosis with two examples.
18. Clinical features of post-traumatic stress disorder.

JSS UNIVERSITY, MYSURU

Fourth Year Pharm.D Examination – April/May 2017

Subject: Clinical Pharmacy

*Note: Draw neat labeled diagrams wherever necessary.
Your answer should be specific to the questions asked.*

Time: 3 hours

Max. Marks: 70

I. LONG ESSAY (Answer any TWO questions)

2x15=30 Marks

1. Define adverse drug reaction (ADR). Describe its management along with its causality assessment scales. (2+13)
2. Describe the activities of clinical pharmacist in a multi-specialty hospital.
3. What is ward round participation? Describe the types, procedure and the significances of ward round participation (2+13)

II. SHORT ESSAY (Answer any SIX questions)

6x5=30 Marks

4. Explain the laboratory test and interpretation of haematological disorders.
5. Describe medication history interview.
6. Elements of verbal and non-verbal skills required for patient counseling.
7. Write an account on methods of detection of medication errors.
8. Importance of sodium and potassium in the body.
9. Describe interpretation of laboratory results of thyroid function tests.
10. Explain the protocol for case presentation.
11. Principles and barriers of patient counseling.

III. SHORT ANSWERS (Answer any FIVE questions)

5x2=10 Marks

12. Mechanism of adverse drug reactions with examples.
13. Drug information centre.
14. Scope of pharmacovigilance in hospital.
15. Cardiac function test.
16. Classification of adverse drug reactions.
17. Clinical review.
18. Communication skills.

JSS UNIVERSITY, MYSURU**Fourth Year Pharm.D Examination – April/May 2017****Subject: Biostatistics & Research Methodology**

*Note: Draw neat labeled diagrams wherever necessary.
Your answer should be specific to the questions asked.*

Time: 3 hours**Max. Marks: 70****I. LONG ESSAY (Answer any TWO questions)****2x15=30 Marks**

1. What are the assumptions of parametric tests? Explain the types of t-tests with suitable examples. (5+10)
2. Explain types of graphical presentation of data with suitable diagrams.
3. Explain correlation and regression. Explain the methodology of Pearson product-moment correlation. (6+9)

II. SHORT ESSAY (Answer any SIX questions)**6x5=30 Marks**

4. Explain the salient features of a good research report.
5. Explain the application of computers systems in community pharmacy.
6. Explain the methodology of cross-sectional studies.
7. Explain the role of computers in patient record data base management in a hospital.
8. Compare the characteristics of variance, standard deviation, standard error of mean and range.
9. Write the methodology of Wilcoxon signed rank test with the help of a suitable example.
10. Explain the types of data with suitable examples for each type.
11. A randomised controlled trial (RCT) was planned to test efficacy of an influenza vaccine. Assuming that the rate of influenza reduced to 60% in placebo group and 45% in vaccinated group. What would be the sample size to achieve a power of 80% at 95% confidence interval (CI)?

III. SHORT ANSWERS (Answer any FIVE questions)**5x2=10 Marks**

12. Define and compare incidence and prevalence.
13. How many samples are needed to estimate the mean haemoglobin (Hb) value in post-menopausal?
14. Define epidemiology. What are the objectives of epidemiological studies?
15. Compare relative risk and odds ratio.
16. Define type-I and type-2 errors. What is the permissible limit for them?
17. What is meant by power of a test?
18. What are non-parametric tests?

JSS UNIVERSITY, MYSURU**Fourth Year Pharm.D Examination –April/ May 2017****Subject: Biopharmaceutics & Pharmacokinetics**

*Note: Draw neat labeled diagrams wherever necessary.
Your answer should be specific to the questions asked.*

Time: 3 hours**Max. Marks: 70****I. LONG ESSAY (Answer any TWO questions)****2x15=30 Marks**

1. Explain the physico-chemical and pharmaceutical factors influencing drug absorption.
2. Explain multiple dosing in intravenous (IV) bolus administration using one compartment model.
3. Explain the experimental designs for bioequivalence studies.

II. SHORT ESSAY (Answer any SIX questions)**6x5=30 Marks**

4. Explain structure of a bio-membrane.
5. Explain phase-I biotransformation reactions.
6. Explain the factors affecting clearance.
7. Why is volume of distribution called apparent?
8. Explain the urinary excretion studies for estimation of pharmacokinetic parameters.
9. What is non-linear kinetics? Explain reasons for the non-linearity.
10. Explain non-compartmental analysis. Write the pharmacokinetic parameters that can be generated in a non-compartmental analysis.
11. Explain bioavailability estimation methods.

III. SHORT ANSWERS (Answer any FIVE questions)**5x2=10 Marks**

12. What is endocytosis?
13. Define clearance. Write its units.
14. What is first order reaction?
15. Differentiate between sigma minus method and rate method in determination of elimination rate constant.
16. Write Michaelis Menten's equation.
17. What is area under curve (AUC)? Write its unit.
18. Define bioavailability.

JSS UNIVERSITY, MYSURU
Fourth Year Pharm.D Examination – April/May 2017
Subject: Clinical Toxicology

*Note: Draw neat labeled diagrams wherever necessary.
Your answer should be specific to the questions asked.*

Time: 3 hours

Max. Marks: 70

I. LONG ESSAY (Answer any TWO questions)**2x15=30 Marks**

1. a) Explain the elimination enhancement methods for the poisoning treatment. (8+7)
b) Explain the procedure and importance of gastric lavage in gut decontamination in poisoning.
2. a) Explain the clinical features and management of nicotine dependence. (7+8)
b) Classify pyrethroids. Explain the management of pyrethroid poisoning.
3. Explain the clinical features and management of following: (7+8)
a) Acute organophosphorus poisoning b) Benzodiazepine poisoning.

II. SHORT ANSWER QUESTIONS (Answer any SIX questions)**6x5=30 Marks**

4. Explain the mechanism of toxicity in amphetamine abuse.
5. Explain the dosage regimen of N-acetyl cysteine therapy protocol and write its advantages and disadvantages.
6. Explain the clinical signs and symptoms of carbamate poisoning.
7. Explain the principles of toxicokinetics in decontamination process of poisoning.
8. Write the clinical symptoms and management of general antidepressants.
9. Describe the management of inorganic acid poisoning.
10. Explain the clinical features and complications of radiation exposure.
11. Explain the clinical presentations and management of nonsteroidal anti-inflammatory drugs (NSAIDs) poisoning.

III. SHORT ANSWERS (Answer any FIVE questions)**5x2=10 Marks**

12. Why does the myoglobin level raise in sea snake bite cases?
13. Describe the reason for Wernicke-Korsakoff syndrome in chronic alcoholic patients.
14. Mention the elimination enhancement employed in the phenobarbital poisoning.
15. Mention the role of folic acid in methanol poisoning.
16. Write a note on the management of heavy metal poisoning.
17. Explain the role of nicotine gum in smoking cessation.
18. Mention the role of naloxone in the opiate poisoning.

JSS UNIVERSITY, MYSURE**Fourth Year Pharm. D Examination – April/May 2017****Subject: Pharmacotherapeutics I & II**

*Note: Draw neat labeled diagrams wherever necessary.
Your answer should be specific to the questions asked.*

Time: 3 hours**Max. Marks: 70****I. LONG ESSAY (Answer any TWO questions)****2x15=30 Marks**

1. Mr. EP is a 26 year old heterosexual man recently diagnosed as HIV-positive. He is an intravenous drug abuser and chronic alcoholic. He came to hospital with complaints of recurrent cough associated with sputum and fever since one month. Doctor advised for a chest X-ray which revealed pneumonia of left lung. Soon he was hospitalised and treated with Inj. Ceftriaxone+Sulbactam (1.5 grams) twice daily for one week and pneumonia got resolved. His present CD-4 cell count is 430 cells/cubic mm. Doctor immediately started with Tab. Co-trimoxazole 960 mg as a prophylaxis treatment. He is on antiretroviral drug Tab. Zidovudine 250 mg twice daily. Mr. EP insists visiting sexual workers even though having HIV.
 - a) Explain the routes of transmission for HIV along with pharmacological management of HIV. What are the counseling points you suggest Mr. EP?
 - b) What are opportunistic infections (OI)? List the common OI and write the signs, symptoms and treatment of any two OI.
2. Explain the clinical features, diagnosis and treatment of systemic lupus erythymatosus (SLE). (7+8)
3. Write the aetiopathogenesis and pharmacological management of chronic obstructive pulmonary disease (COPD). (7+8)

II. SHORT ESSAY (Answer any SIX questions)**6x5=30 Marks**

4. Explain primary and secondary hypertension. Explain the pharmacotherapy of hypertension with the adult doses and adverse reactions of drugs.
5. Write a note on hormone replacement therapy.
6. Explain the clinical features of psoriasis. Explain the procedure of phototherapy.
7. Explain the drugs used in the treatment of hyperlipidemia.
8. Write a note on drug use in geriatrics.
9. Write a note on selection of antibiotic for surgical prophylaxis.

10. Explain the common complications and their management in chronic renal failure.
11. Explain the clinical features and treatment options for vaginal candidiasis.

III. SHORT ANSWERS (Answer any FIVE questions)

5x2=10 Marks

12. Define tidal volume and forced expiratory volume.
13. Clinical features of chronic bronchitis.
14. Write a note on administration and sites for insulin administration. What happens if insulin is administered continuously on a single location?
15. Explain the staging of breast cancer and mention any one chemotherapy regimen.
16. Write the management of glaucoma.
17. Mention the treatment options for right sided heart failure.
18. Explain the clinical features of meningitis. What are the changes in cerebrospinal fluid analysis during a bacterial meningitis?

JSS UNIVERSITY, MYSURU**Fifth Year Pharm.D Examination – April/May 2017****Subject: Clinical Research**

*Note: Draw neat labeled diagrams wherever necessary.
Your answer should be specific to the questions asked.*

Time: 3 hours**Max. Marks: 70****I. LONG ESSAY (Answer any TWO questions)****2x15=30 Marks**

1. Expand the role and responsibilities of sponsor, institutional review board (IRB) and regulatory authorities in good clinical practice (GCP) auditing. (5+5+5)
2. Explain the composition, responsibilities and procedures of institutional ethics committee (IEC). (5+5+5)
3. Describe post-authorization studies and its importance.

II. SHORT ESSAY (Answer any SIX questions)**6x5=30 Marks**

4. Explain the phases of clinical trials.
5. Explain the role and responsibilities of contract research coordinators.
6. Explain data management and its components.
7. Explain serious adverse events (SAE) in clinical trials.
8. Importance of protocol and its components in clinical trials.
9. Explain the contents of the investigator's brochure.
10. Explain the process of informed consent for trial subjects.
11. Explain sponsor responsibilities in data handling and record keeping.

III. SHORT ANSWERS (Answer any FIVE questions)**5x2=10 Marks**

12. Role of independent data-monitoring committee.
13. Types of investigational new drug (IND) application.
14. Non-clinical studies.
15. Purpose of monitoring adverse drug reactions (ADR).
16. Premature termination of a trial.
17. What is trial initiation monitoring report?
18. Randomization procedures.

JSS UNIVERSITY, MYSURU**Fifth Year Pharm.D Examination – April/May 2017****Subject: Pharmacoepidemiology & Pharmacoeconomics**

*Note: Draw neat labeled diagrams wherever necessary.
Your answer should be specific to the questions asked.*

Time: 3 hours**Max. Marks: 70****I. LONG ESSAY (Answer any TWO questions)****2x15=30 Marks**

1. Explain the measures of associations in epidemiological methods.
2. Principles of pharmacoeconomics and its evaluation.
3. Explain the scope and applications of pharmacoepidemiological methods.

II. SHORT ESSAY (Answer any SIX questions)**6x5=30 Marks**

4. Explain the observational studies and their limitations.
5. Explain the methods of drug utilization review.
6. What are the criteria for selecting a patient-based outcome measure?
7. Define meta-analysis. Explain forest plot.
8. Explain the study designs to detect drug induced birth defects.
9. Explain medical record data base and its advantages.
10. Differentiate measures of incidence and prevalence.
11. What are prescription event monitoring and its importance?

III. SHORT ANSWERS (Answer any FIVE questions)**5x2=10 Marks**

12. What is relative measure?
13. What is absolute measure?
14. What is hypothesis?
15. What is nested cohort?
16. Define categorical variables.
17. Define case report.
18. What is defined daily dose?

JSS UNIVERSITY, MYSURU**Fifth Year Pharm.D Examination – April/May 2017****Subject: Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring**

*Note: Draw neat labeled diagrams wherever necessary.
Your answer should be specific to the questions asked.*

Time: 3 hours**Max. Marks: 70****I. LONG ESSAY (Answer any TWO questions)****2x15=30 Marks**

1. a) Explain induction and inhibition of drug metabolism. (8+7)
b) Explain approaches for dose adjustments in uremic patients.
2. a) Explain the measurements of glomerular filtration rate and creatinine clearance. (7+8)
b) Explain genetic polymorphism in drug metabolism with suitable examples.
3. a) Write a note on therapeutic drug monitoring of drugs used in psychiatric conditions. (8+7)
b) Write a note on analysis of population pharmacokinetic data.

II. SHORT ESSAY (Answer any SIX questions)**6x5=30 Marks**

4. Write a note on adverse drug reactions attributed to genetic differences.
5. The elimination half-life of an antibiotic is 3 hours with an apparent volume of distribution equivalent to 20% of body weight. The usual therapeutic range for this antibiotic is between 5 and 15 µg/ml. Adverse toxicity for this drug is often observed at serum concentration greater than 20 µg /ml. Calculate a dosage regimen (multiple intravenous (IV) doses) that will just maintain the serum drug concentration between 5 and 15 µg/ml.
6. Describe protocol of therapeutic drug monitoring.
7. Write notes on inhibition of biliary excretion.
8. Explain Bayesian theory of population pharmacokinetics.
9. Write a note on factors considered for designing dosage regimen.
10. Explain the effect of hepatic diseases on pharmacokinetics.
11. Calculate creatinine clearance of a 25 years old male (height: 5 feet, 4 inches, weight: 103 kg) patient with a creatinine clearance rate (CCr) of 1 mg/dL.

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III. SHORT ANSWERS (Answer any FIVE questions)

5x2=10 Marks

12. Explain hepatic metabolic markers.
13. Define extracorporeal removal of drugs.
14. Differentiate between pharmacogenetic and non-genetic influences on variations in drug therapy.
15. Define clinical pharmacokinetics.
16. Differentiate between haemodialysis and haemoperfusion.
17. Explain the importance of P-450 isoenzymes.
18. Define pharmacogenetics.

JSS UNIVERSITY, MYSURU**First Year Pharm.D (RS 1) Examination - April/May 2017****Subject: Pharmaceutics****Time: 3 hours****Max. Marks: 70***Your answers should be specific to the questions asked.**Draw neat labeled diagrams wherever necessary***Section A: Multiple Choice Questions**

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A**Note:**

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions**20 x 1 = 20 Marks**

- 1 First edition of Indian Pharmacopoeia (IP) was published in the year:
 - a) 1868
 - b) 1947
 - c) 1985
 - d) 1996
- 2 Following product should not be applied on broken skin:
 - a) lotion
 - b) ointments
 - c) creams
 - d) liniment
- 3 An ideal suppository base shall:
 - a) dissolve easily
 - b) retain original shape upon insertion
 - c) melt at body temperature
 - d) be free of dispersed particle
- 4 The following document is an example for non-official compendia:
 - a) European Pharmacopoeia
 - b) United States Pharmacopoeia
 - c) National formulary
 - d) Merck index

- 5 Suture made of which of the following material is NOT a non-absorbable suture :
- a) silk
 - b) linen
 - c) polyamide
 - d) polyglycolic acid
- 6 Collodions contain:
- a) ethanol
 - b) ethyl cellulose
 - c) pyroxilin
 - d) pigments
- 7 'Shake well before use' label is not required for:
- a) emulsion
 - b) suspensions
 - c) gargles
 - d) lotions
- 8 Route of administration with quick onset of action is:
- a) sublingual
 - b) subcutaneous
 - c) ophthalmic
 - d) intravenous
- 9 Overdose is an example for _____ incompatibility.
- a) therapeutic
 - b) physical
 - c) chemical
 - d) insoluble
- 10 The following formula is used to calculate the dose for infants:
- a) Fried's
 - b) Young's
 - c) Dilling's
 - d) Cowling's
- 11 First pharmaceutical association in India was started in:
- a) Banaras
 - b) Punjab
 - c) Madras
 - d) Bombay

- 12 Suspension contains:
- a) insoluble powders
 - b) immiscible phases
 - c) insoluble drug particle
 - d) soluble drug particle
- 13 Measurement of liquids as per weights and measures is:
- a) gallons
 - b) grain
 - c) scruple
 - d) drachm
- 14 Catgut is prepared from submucosal layer of the intestine of :
- a) Cat
 - b) Sheep
 - c) human being
 - d) rabbit
- 15 Theobroma oil is also known as :
- a) polyethylene glycol
 - b) cocoa butter
 - c) witpsol
 - d) glycerol gelatin
- 16 Liquefaction of camphor and menthol on mixing liquefies, it is called:
- a) hygroscopic
 - b) effervescent
 - c) deliquescent
 - d) eutectic mixture
- 17 Free flowing fine powder meant for external purpose is:
- a) dusting powder
 - b) compound powder
 - c) effervescent powder
 - d) hydrophobic powder
- 18 Percolation also involves the process :
- a) decoction
 - b) infusion
 - c) digestion
 - d) maceration

19 In extraction, remaining extract is recovered by :

- a) pressing the marc
- b) milling the marc
- c) moistening the drug
- d) macerating the marc

20 One fluid ounce is equal to:

- a) 25 ml
- b) 30 ml
- c) 45 ml
- d) 90 ml

Section B

LONG ESSAY (Answer any two questions)

2x10=20 Marks

- 1 Define posology and write its importance. Explain any four factors affecting dose selection. (4+6)
- 2 List the commonly used stabilizers in liquid preparations. Explain the formulation of gargles and mouth washes with its uses. (2+8)
- 3 Classify emulsions. Describe creaming, cracking and phase inversion in emulsions. (2+8)

Section C

SHORT ESSAY (Answer any six questions)

6x5= 30 Marks

- 4 Briefly explain cold compression method of preparation of suppositories.
- 5 Write a note on history and evolution of pharmaceutical industry in India.
- 6 Explain the significance of percentage in calculations. Add a note on units used to explain various concentrations.
- 7 What is dusting powder? Explain the formulation for effervescent powder and list the uses of effervescent powder.
- 8 What is non-official compendium? Write two examples. Write a note on extra pharmacopoeia.
- 9 Explain physical incompatibility with examples.
- 10 Explain the process of modified maceration.
- 11 Enlist five essential properties for ligatures and sutures.

JSS UNIVERSITY, MYSURU**First Year Pharm.D (RS 1) Examination - April/May 2017****Subject: Remedial Mathematics****Time: 3 hours****Max. Marks: 70**

*Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary*

Section A: Multiple Choice Questions

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A**Note:**

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions**20 x 1 = 20 Marks**

- 1 The value of the $\begin{vmatrix} 1 & -3 \\ 4 & 5 \end{vmatrix}$
 - a) -17
 - b) 10
 - c) 17
 - d) 20
- 2 If the matrix $\begin{vmatrix} 4x & -2 \\ 10 & 1 \end{vmatrix}$ is singular then value of x is :
 - a) 5
 - b) -5
 - c) 3
 - d) -3
- 3 $A = \begin{vmatrix} 1 & 3 \\ 3 & 4 \end{vmatrix}$ $B = \begin{vmatrix} 1 & 2 \\ 4 & 3 \end{vmatrix}$ the value of A+B is :
 - a) $\begin{vmatrix} 2 & 5 \\ 7 & 7 \end{vmatrix}$
 - b) $\begin{vmatrix} 0 & 1 \\ -1 & 1 \end{vmatrix}$
 - c) $\begin{vmatrix} 4 & 3 \\ 2 & 1 \end{vmatrix}$
 - d) $\begin{vmatrix} 4 & 5 \\ 2 & 7 \end{vmatrix}$

- 4 Find the value of $\begin{bmatrix} 1 & a & b+c \\ 1 & b & c+a \\ 1 & c & a+b \end{bmatrix}$
- 1
 - 0
 - 1
 - 2
- 5 The centre of the circle $X^2+Y^2-6X-8Y+25$ is :
- (3, 4)
 - (4, -3)
 - (-3, -4)
 - (0, -1)
- 6 If $\begin{bmatrix} 3x+7 & 5 \\ Y+1 & 6 \end{bmatrix} = \begin{bmatrix} 1 & Y-2 \\ 8 & 6 \end{bmatrix}$ find the value of x
- 2
 - 2
 - 5
 - 7
- 7 Find the value of $\sin(90-x)$
- $\sin x$
 - $\cos x$
 - $-\sin 0$
 - $-\cos 0$
- 8 The radius of the circle $X^2+Y^2-4X+8Y+4=0$ is:
- 3
 - 4
 - 5
 - 6
- 9 Midpoint of (3,0) and (-1, 4) is:
- (1, 2)
 - (-1, -2)
 - (2, 4)
 - (2, 3)
- 10 The slope of (3, -2) and (-1, 4) is :
- $3/2$
 - $-3/2$
 - $2/3$
 - $1/3$
- 11 The centroid of the triangle with the vertices at (-2,-5), (-2, 12) and (10, -1) is:
- (2, 2)
 - (3, 3)
 - (4, 4)
 - (6, 6)

- 12 Limit $\frac{3x+4}{6x-7}$ is:
 $x \rightarrow 0$
 a) $-4/7$
 b) $4/7$
 c) $7/4$
 d) $-7/4$
- 13 Limit $\frac{\sin \theta}{\theta}$ is:
 $x \rightarrow 0$
 a) 3
 b) -1
 c) 2
 d) 1
- 14 $\frac{d}{dx}(X^3)$ is
 a) $-3x^2$
 b) $3x^{-2}$
 c) $4x$
 d) $6x$
- 15 If $Y^2 = 4ax$ find dy/dx
 a) y/x
 b) $-y/x$
 c) $2a/y$
 d) $4a/y$
- 16 Auxillary equation is $m^2-1=0$. The value of m is:
 a) 1
 b) -1
 c) +1
 d) 0
- 17 The Value of m in the equation $m^2-5m+6=0$ is
 a) 3 or 2
 b) 3 or -3
 c) 5 or -5
 d) 2 or 4
- 18 The order of the differential equation in $d^2y/dx^2+3y=0$ is:
 a) 1
 b) 2
 c) 3
 d) 4
- 19 The integrating factor of this equation $\frac{dy}{dx} + \frac{y}{x} = x^2$ is :
 a) X^3
 b) X^2
 c) X
 d) $-X$

20 The Laplace transform of $L(e^{4t}) =$

- a) $1/s+3$
- b) $1/s-4$
- c) $1/s+5$
- d) $1/s-5$

Section B

LONG ESSAY (Answer any two questions)

2x10=20 Marks

- 1 a) Solve the following system of equation by matrix method:

$$X+2y+Z=7, 2x-Y+2z=4, X+Y-2z=-1$$

b) $A = \begin{bmatrix} 1 & 2 \\ 1 & 1 \end{bmatrix}$ $B = \begin{bmatrix} 0 & -1 \\ 1 & 2 \end{bmatrix}$ verify $[AB]^{-1} B^{-1} A^{-1}$

- 2 a) Find the equation of the straight line through $(-4, -3)$ and perpendicular to the line joining the points $(1, 3)$ and $(2, 7)$.

- b) Find the equation of the parabola whose focus is $(1, 2)$ and directive is $X+Y-2=0$.

- 3 a) If $X=a \cos^3 t$ $y=b \sin^3 t$ find $\frac{dy}{dx}$

b) Differentiate $\frac{1-\sin x}{1+\sin x}$

Section C

SHORT ESSAY (Answer any six questions)

6x5= 30 Marks

- 4 In any triangle prove that $\tan\left(\frac{(B-C)}{2}\right) = \left(\frac{b-c}{b+c}\right) \cot A/2$

- 5 Solve $\frac{dy}{dx} + y \cot x = \cos x$

- 6 Find the inverse of the matrix $A = \begin{bmatrix} 1 & 1 & -1 \\ 2 & 1 & 0 \\ -1 & 2 & 3 \end{bmatrix}$

- 7 If $A = \begin{bmatrix} 2 & 1 \\ 3 & 2 \end{bmatrix}$ $B = \begin{bmatrix} 2 & -1 \\ -3 & -4 \end{bmatrix}$ verify $(A B)^T + A^T$

- 8 Integrate $\int_0^{\pi/2} \frac{\cos^2 x}{1+\sin x} dx$

- 9 Find the Laplace transform t^2+3t+5

- 10 Differentiate $X^2 e^2 \log x$

- 11 If $(A+B) = 45^\circ$ show that $(1+\tan A)(1+\tan B) = 2$.

JSS UNIVERSITY, MYSURU**Second Year Pharm.D (RS 1) Examination - April/May 2017****Subject: Pathophysiology****Time: 3 hours****Max. Marks: 70**

*Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary*

Section A: Multiple Choice Questions

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A**Note:**

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions**20 x 1 = 20 Marks**

- 1 Incomplete metabolism of lipoproteins is termed as:
 - a) hypothyroidism
 - b) hyperglycemia
 - c) hyperlipoproteinemia
 - d) hypertension
- 2 The basic components of acute inflammation responses are:
 - a) haemodynamic changes
 - b) hyaline necrosis
 - c) kinin forming proteases
 - d) liberation of leucokinins
- 3 Biotin is essential for:
 - a) translation
 - b) carboxylation
 - c) hydroxylation
 - d) transamination
- 4 The commonest cause of ischemic infarction is:
 - a) physical agents
 - b) hypoxia
 - c) chemical agents
 - d) atherosclerosis

- 5 Following types of cirrhosis is usually macronodular cirrhosis:
- a) post-necrotic cirrhosis
 - b) alcoholic cirrhosis
 - c) Wilson's disease
 - d) hemochromatosis
- 6 The common route of transmission of hepatitis A virus is:
- a) transplacental route
 - b) respiratory route
 - c) parenteral route
 - d) Faeco-oral route
- 7 Most common microbiological cause of intestinal obstruction is :
- a) coliform bacteria
 - b) typhoid fever
 - c) tuberculosis
 - d) amoebic dysentery
- 8 Pigment gall stones are associated with :
- a) hemolytic anemia
 - b) obesity
 - c) tumour of gall bladder
 - d) atrophy of gall bladder
- 9 Grafts between donor and recipient in the same species is called:
- a) autograft
 - b) isograft
 - c) allograft
 - d) xenograft
- 10 O_2 , H_2O_2 , OH and NO are the products that are released from :
- a) basophils
 - b) activated neutrophils
 - c) monocytes
 - d) platelets
- 11 Following are the major risk factors for development of atherosclerosis EXCEPT:
- a) diabetes mellitus
 - b) increased HDL – cholesterol levels
 - c) cigarette smoking
 - d) hypercholesterolemia

- 12 Most reliable features of malignancy of a tumor is :
- a) invasion
 - b) giant cells
 - c) capsule formation
 - d) metastasis
- 13 Following is the most specific enzyme for diagnosis of acute myocardial infarction
- a) CPK-MB
 - b) SHPT
 - c) CPK-MM
 - d) CPK-BB
- 14 Vitamin B₁₂ is:
- a) extrinsic factor of castle
 - b) intrinsic factor of castle
 - c) prolactin
 - d) cholecalciferol
- 15 Which of the following are NOT hydrolytic enzyme :
- a) ribonuclease
 - b) proteases
 - c) carbohydrases
 - d) phosphatases
- 16 All of the following are implicated in the aetiology of peptic ulcer disease EXCEPT
- a) chronic use of NSAIDs
 - b) H pylori infection
 - c) Zollinger Ellison syndrome
 - d) hypertension
- 17 All of the following can be causes of pre-renal kidney injury EXCEPT
- a) severe burns
 - b) NSAID use
 - c) benign prostatic hyperplasia
 - d) heart failure
- 18 Depression is mental illness in which the patient DOES NOT experience:
- a) insomnia
 - b) sadness
 - c) diminished interest
 - d) loss of appetite

- 19 Atherosclerosis is a clinical syndrome of :
- a) deposition of calcium in arteries
 - b) formation of fat plaque and narrowing of arteries
 - c) deposition of calcium in veins
 - d) formation of plaque and narrowing of viens
- 20 Measurement of ionizing radiation is :
- a) Roentgen
 - b) Rad
 - c) A⁰
 - d) Gray

Section B

LONG ESSAY (Answer any two questions)

2x10=20 Marks

- 1 Describe the pathogenesis of acute inflammation.
- 2 What is hypersensitivity? Explain type I, II and III of hypersensitivity reactions.
- 3 Enlist autoimmune diseases. Explain pathogenesis of rheumatoid arthritis.

Section C

SHORT ESSAY (Answer any six questions)

6x5= 30 Marks

- 4 Explain aetiology and pathogenesis of cancer.
- 5 Explain the mechanism of hypovolemic shock.
- 6 Enumerate the biological effects of radiations.
- 7 Write a note on pathogenesis of parkinsonism.
- 8 Explain pathophysiology of diabetes mellitus.
- 9 Describe chronic obstructive pulmonary diseases (COPD).
- 10 Explain the mechanism of rejection of allograft. Add a note on xenograft.
- 11 What is schizophrenia? Explain the pathophysiology and clinical symptoms schizophrenia.

JSS UNIVERSITY, MYSURU**Second Year Pharm.D (RS 1) Examination - April/May 2017****Subject: Pharmaceutical Microbiology****Time: 3 hours****Max. Marks: 70**

*Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary*

Section A: Multiple Choice Questions

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A**Note:**

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions**20 x 1 = 20 Marks**

- 1 The first phase of a growth curve is :
 - a) log phase
 - b) lag phase
 - c) stationary phase
 - d) saturation phase
- 2 A bacillus bacterium with a single flagellum at each end is called as :
 - a) monotrichous
 - b) amphitrichous
 - c) lophotrichous
 - d) peritrichous
- 3 Separation of a single bacterial colony is called :
 - a) isolation
 - b) separation
 - c) pure culturing
 - d) inoculation
- 4 Which of the following is ionizing radiation?
 - a) UV rays
 - b) IR
 - c) X-rays
 - d) visible rays

- 5 Which of the following methods of has no effect on spores?
- boiling with water
 - hot air oven
 - autoclave
 - radiation sterilization
- 6 *Treponema pallidum* can be best identified using :
- fluorescence microscope
 - bright field microscope
 - dark field microscope
 - fluorescence microscope
- 7 Autoclaving is carried at :
- less than 100 °C
 - 100 °C
 - 121 °C
 - 180 °C
- 8 Bacterial growth characterized by two separate phases due to the preferential use of one carbon source over another is called :
- synchronous growth
 - continuous growth
 - diauxic growth
 - batch growth
- 9 Which of the following is an example of live vaccine?
- pertussis
 - mumps
 - cholera
 - rabies
- 10 Triple toxoid vaccine gives protection against:
- diphtheria, tetanus and rabies
 - tetanus, whooping cough, tuberculosis
 - whooping cough, tetanus and diphtheria
 - whooping cough, cancer and tuberculosis
- 11 AIDS is caused by:
- retrovirus
 - prion
 - rhabdovirus
 - rotavirus

- 12 The rejection of an organ transplant such as a kidney transplant is an example of _____ hypersensitivity.
- a) immediate
 - b) delayed
 - c) allergic
 - d) simple
- 13 In Elisa technique, the antibodies are labeled by :
- a) acridine orange
 - b) alkaline phosphate
 - c) neutral red
 - d) bromothymol blue
- 14 Viral antigens are likely :
- a) proteins
 - b) glycoproteins
 - c) lipoproteins
 - d) Both a and b
- 15 Which one of the following viral diseases has the shortest incubation period?
- a) rubella
 - b) influenza
 - c) hepatitis A
 - d) hepatitis B
- 16 Bacilli Calmette Guerin (BCG) contains the avirulent strains of :
- a) human tubercle bacilli
 - b) avian tubercle bacilli
 - c) bovine tubercle bacilli
 - d) a typical mycobacteria
- 17 Tdap vaccine is NOT a vaccine :
- a) pertussis
 - b) diphtheria
 - c) tetanus
 - d) tuberculosis
- 18 Coryne bacterium is :
- a) gram positive
 - b) acid fast
 - c) gram negative
 - d) anaerobic

- 19 Lyophilization means :
- sterilization
 - freeze-drying
 - burning to ashes
 - exposure to radiation
- 20 Phenol co-efficient indicates :
- efficiency of a disinfectant
 - dilution of a disinfectant
 - purity of a disinfectant
 - quantity of a disinfectant

Section B

LONG ESSAY (Answer any two questions)

2x10=20 Marks

- Write principle involved in antibiotic assay. Explain bioassay of streptomycin. (6+4)
- Define and classify immunity. Explain natural and acquired immunity. (5+5)
- Explain the methods of isolation of pure cultures.

Section C

SHORT ESSAY (Answer any six questions)

6x5= 30 Marks

- Explain the structure of bacterial cell with diagram.
- Define sterilization, disinfection and cleaning. Classify sterilization methods.
- Define and explain the characteristics of an antigen.
- What are the factors affecting the action of disinfectants and antiseptics?
- Explain the methods of cultivation of virus.
- Explain Schick's test.
- Name the causative organism, mode of transmission and diagnosis of typhoid.
- Explain national immunization schedule. What is the importance of booster dose?

JSS UNIVERSITY, MYSURU**Second Year Pharm.D (RS 1) Examination - April/May 2017****Subject: Pharmacognosy & Phytopharmaceuticals****Time: 3 hours****Max. Marks: 70***Your answers should be specific to the questions asked.**Draw neat labeled diagrams wherever necessary***Section A: Multiple Choice Questions**

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A**Note:**

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions**20 x 1 = 20 Marks**

- 1 Orange seeds are used as adulterants in :
 - a) fennel
 - b) coriander
 - c) cardamom
 - d) isapgol
- 2 Borntrager's test is for identification of:
 - a) alkaloids
 - b) anthraquinones
 - c) carbohydrates
 - d) tannins
- 3 The chemical nature of eugenol is :
 - a) phenol
 - b) alcohol
 - c) aldehyde
 - d) ketone
- 4 Which of the following drug DOES NOT belong to carbohydrates ?
 - a) pectin
 - b) acacia
 - c) guar gum
 - d) benzoin

- 5 A glycoside is a combination of :
- a) aglycone + sugar
 - b) aglycone + glucose
 - c) aglycone + galactose
 - d) aglycone + rhamnose
- 6 Paracytic stomata is present in :
- a) digitalis
 - b) fennel
 - c) datura
 - d) senna
- 7 Lignified trichomes are present in :
- a) datura
 - b) nux-vomica
 - c) senna
 - d) coriander
- 8 The fiber that produces balloon like swelling on treating with cuoxam reagent is :
- a) raw cotton
 - b) absorbent cotton
 - c) purified cotton
 - d) surgical cotton
- 9 A cardiovascular substance of marine origin :
- a) acanthelin
 - b) anthopleurin
 - c) manoalide
 - d) tetradotoxin
- 10 The drug which contains saponin :
- a) senna
 - b) rauwolfia
 - c) liquorice
 - d) ephedra
- 11 Alginic acid is obtained from :
- a) red algae
 - b) gelidium
 - c) fungi
 - d) brown algae

- 12 Isapgol gives pink colour with :
- a) Phloroglucinol in hydrochloric acid
 - b) ruthenium red
 - c) N/50 Iodine
 - d) Sudan III
- 13 Schizolysigenous oil gland is present in :
- a) fennel
 - b) cinnamon
 - c) coriander
 - d) clove
- 14 Fiehe's test is performed to identify :
- a) arabin
 - b) agarose
 - c) artificial invert sugar
 - d) bassorin
- 15 Reserpine is used as :
- a) antihypertensive
 - b) anti-dysenteric
 - c) anticancer
 - d) antibacterial
- 16 Shark liver oil IP contains :
- a) vitamin E
 - b) vitamin C
 - c) vitamin A & D
 - d) vitamin K
- 17 An example for an alkaloid used as oxytocic drug is :
- a) ergotamine
 - b) ergosine
 - c) ergometrine
 - d) ergotaminine
- 18 Which of the following drug is NOT in the form of bark :
- a) cinnamon
 - b) rauwolfia
 - c) cinchona
 - d) cascara

19 _____ is responsible for viscosity of agar solution.

- a) agarose
- b) agarose+ agarpectin
- c) amylopectin
- d) agarpectin

20 Pyrethrum DOES NOT contain :

- a) pyrethrin
- b) cinerin
- c) nicotin
- d) jasmolin

Section B

LONG ESSAY (Answer any two questions)

2x10=20 Marks

- 1 Write the source, preparation, chemical identification tests and pharmaceutical uses of absorbent cotton.
- 2 Explain the chemical and pharmacological classification of drugs of natural origin. Add a note on their merits and demerits. (6+4)
- 3 Explain the macroscopy, microscopy and medicinal uses of ephedra.

Section C

SHORT ESSAY (Answer any six questions)

6x5= 30 Marks

- 4 Definition, present status and future scope of pharmacognosy.
- 5 Write the method of preparation, chemical constituents, tests and uses of chaulmoogra oil.
- 6 Write a note on herb-drug interaction.
- 7 Pharmacognosy of clove.
- 8 Differentiate fennel from coriander.
- 9 Definition, classification and identification tests for alkaloids.
- 10 Write the source, preparation, chemical constituents, chemical test and uses of bees wax.
- 11 Write the source, method of extraction, chemical constituents and uses of any one fixed oil from marine source.

JSS UNIVERSITY, MYSURU**Second Year Pharm.D (RS 1) Examination - April/May 2017****Subject: Pharmacology - I****Time: 3 hours****Max. Marks: 70***Your answers should be specific to the questions asked.**Draw neat labeled diagrams wherever necessary***Section A: Multiple Choice Questions**

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A**Note:**

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions**20 x 1 = 20 Marks**

- 1 What type of drug delivery will a rectal suppository be to treat fever?
 - a) parenteral and local
 - b) parenteral and systemic
 - c) enteral and local
 - d) enteral and systemic
- 2 Atropine is used to decrease gastrointestinal motility and to counteract anticholinesterase poisoning. What property does it have?
 - a) nicotinic agonist
 - b) nicotinic antagonist
 - c) muscarinic agonist
 - d) muscarinic antagonist
- 3 Which of the following anti-hypertensives is contraindicated with digoxin?
 - a) frusemide
 - b) losartan
 - c) atenolol
 - d) captopril
- 4 Indicate the competitive antagonist of benzodiazepine receptors :
 - a) buspirone
 - b) flumazenil
 - c) picrotoxin
 - d) bicuculline

- 5 Of the following local anaesthetics, which one has greater potency?
- a) lidocaine
 - b) bupivacaine
 - c) ropivacaine
 - d) procaine
- 6 The clinical use of codeine is :
- a) antipyretic
 - b) anti-inflammatory
 - c) antiallergy
 - d) antitussive
- 7 The most commonly used therapy for Grave's disease is :
- a) propylthiouracil
 - b) potassium periodate
 - c) radioactive iodine
 - d) Methimazole
- 8 Which one of the following is NOT a second generation anti-histaminic?
- a) cyclizine
 - b) loratidine
 - c) fexofenadine
 - d) acrivastine
- 9 Most drugs are absorbed in the gastrointestinal tract by :
- a) active transport
 - b) passive diffusion
 - c) carrier mediated
 - d) endocytosis
- 10 Organic nitrates relax vascular smooth muscle by :
- a) increasing intracellular cyclic AMP
 - b) decreasing intracellular cyclic AMP
 - c) increasing intracellular cyclic GMP
 - d) decreasing intracellular cyclic GMP
- 11 All the following anti-epileptic drugs act via sodium channel, EXCEPT:
- a) phenytoin
 - b) valproate
 - c) lamotrigine
 - d) vigabatrin

- 12 Which of the following local anaesthetic is an ester?
- a) procaine
 - b) lignocaine
 - c) bupivacaine
 - d) Mepivacaine
- 13 An elderly man had difficulty in urination, after taking a course of nasal decongestant. Which receptor is involved in this side effect :
- a) beta-2 adrenergic
 - b) serotonergic
 - c) alpha-1 adrenergic
 - d) muscarinic
- 14 All of the following statements about an alpha-glucosidase inhibitor are true EXCEPT:
- a) reduces intestinal absorption of carbohydrates
 - b) effective in both type I & 2 diabetes
 - c) hypoglycemia is a common and serious side effect
 - d) can be used with other oral hypoglycemic drugs
- 15 Which of the following drugs is useful in prophylaxis of migraine?
- a) propranolol
 - b) sumatriptan
 - c) ergotamine
 - d) domperidone
- 16 Anti-migraine specificity of ergot alkaloids is mediated by which receptor?
- a) adrenergic
 - b) serotonergic
 - c) dopaminergic
 - d) cholinergic
- 17 The prolactin inhibiting hormone is :
- a) oxytocin
 - b) inhibin
 - c) dopamine
 - d) progestin
- 18 The following expectorant acts both directly and reflexly :
- a) guaiphenesin
 - b) bromhexine
 - c) terpin hydrate
 - d) Potassium iodide

- 19 Which one of the following is a pure narcotic antagonist?
- a) methadone
 - b) nalorphin
 - c) naltrexone
 - d) nalburphine
- 20 Which anti-arrhythmic drug does not belong to class Ic ?
- a) flecainide
 - b) tocainide
 - c) propafenone
 - d) encainide

Section B

LONG ESSAY (Answer any two questions)

2x10=20 Marks

- 1 Classify the routes of administration of drugs with suitable examples. (6+4)
Explain four merits and de-merits of oral route.
- 2 Explain the synthesis, storage, release and uptake of adrenergic neurotransmitter with a diagram. Add a note on drugs affecting the adrenergic neurotransmission. (7+3)
- 3 Explain the pharmacological actions of alcohol.

Section C

SHORT ESSAY (Answer any six questions)

6x5= 30 Marks

- 4 Define pre-anaesthetic medication. Explain the actions of the drugs used for this purpose.
- 5 Explain the mechanism of action of phenytoin. Explain its toxicities.
- 6 Classify bronchodilators citing an example each. Explain the mechanism of action of theophylline.
- 7 Outline the mechanism of action of oral contraceptives.
- 8 Classify first generation anti-histaminics. List the drawbacks of this class of drugs.
- 9 Explain the role of renin-angiotensin-aldosterone pathway in the regulation of blood pressure.
- 10 Explain five drug related factors modifying drug action.
- 11 Write a note on non-adrenergic non-cholinergic transmission.

JSS UNIVERSITY, MYSURU**Second Year Pharm.D (RS 1) Examination - April/May 2017****Subject: Community Pharmacy****Time: 3 hours****Max. Marks: 70***Your answers should be specific to the questions asked.**Draw neat labeled diagrams wherever necessary***Section A: Multiple Choice Questions**

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A**Note:**

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions**20 x 1 = 20 Marks**

- 1 Expansion of HIV:
 - a) Human immuno virus
 - b) Human immune-syndrome virus
 - c) Human immune-acquired virus
 - d) Human immunodeficiency virus
- 2 Environmental barrier in patient counselling :
 - a) difference in the level of platform
 - b) lack of knowledge on the drugs and disease
 - c) perception of patient
 - d) lack of time for the patient
- 3 Which one of the following is available as OTC medicine :
 - a) paracetamol
 - b) amoxycillin
 - c) codeine phosphate
 - d) alprazolam
- 4 The gap between the ordering of stock and the receipt of the same is:
 - a) lead time
 - b) administration time
 - c) conveyance time
 - d) manufacturer's time

- 5 _____ can lead to medication nonadherence :
- a) complexity of the drug
 - b) patient counselling
 - c) generic products given
 - d) medication reminder cards
- 6 Confirmatory test of HIV is :
- a) Western blot test
 - b) ELISA test
 - c) Mantoux test
 - d) Widal test
- 7 Dyspepsia refers to :
- a) loose stools
 - b) indigestion
 - c) heart burns
 - d) diarrhoea
- 8 Vitamin K deficiency can lead to :
- a) scurvy
 - b) night blindness
 - c) bleeding
 - d) osteomalacia
- 9 Responsible provision of drug therapy by pharmacists to achieve therapeutic outcomes is called :
- a) pharmaceutical care
 - b) patient care
 - c) patient counselling
 - d) medication therapy management
- 10 Amoebiasis is treated with :
- a) diloxanide
 - b) chloramphenicol
 - c) chloroquine
 - d) levofloxacin
- 11 Drug used for typhoid :
- a) chloroquine
 - b) ciprofloxacin
 - c) rifampicin
 - d) dapsone

- 12 EOQ in inventory control stands for :
- a) equally ordered quantity
 - b) easily ordered quantity
 - c) economic order quantity
 - d) effectively organized quantity
- 13 Rx in prescription means :
- a) take thou
 - b) make thee
 - c) analyze thou
 - d) give thee
- 14 Safety stock :
- a) medicament stock used for saving life of the patient
 - b) minimum stock of medicine to be maintained to avoid depletion
 - c) stock of drugs to be safely moved
 - d) stock of medication to be kept in safe custody of the chief pharmacist
- 15 Slim disease is better known as :
- a) malaria
 - b) tuberculosis
 - c) AIDS
 - d) leprosy
- 16 Rickets is due to the deficiency of :
- a) vitamin A
 - b) vitamin D
 - c) vitamin E
 - d) protein
- 17 Widal test is done in case of :
- a) typhoid
 - b) malaria
 - c) leprosy
 - d) tuberculosis
- 18 ABC analysis of inventory control is based on :
- a) health needs of public
 - b) cost expenditure and consumption of drugs
 - c) lead time of the manufacturer
 - d) safety stock of drug to be in hand

- 19 Cholecalciferol is :
- a) vitamin E
 - b) vitamin D
 - c) vitamin E
 - d) vitamin B3
- 20 Direct method for checking patient adherence :
- a) pill count method
 - b) patient interview
 - c) drug analysis in patient blood
 - d) liquid medicine measure in the container

Section B

LONG ESSAY (Answer any two questions)

2x10=20 Marks

- 1 What is AIDS? Explain the cause, mode of transmission, diagnosis and pharmacological treatment of AIDS. (2+8)
- 2 Explain the roles and responsibilities of community pharmacist and the legal requirements for a community pharmacy.
- 3 Explain the cause and mode of transmission of leprosy. Write the signs, symptoms and pharmacological treatment of leprosy. (5+5)

Section C

SHORT ESSAY (Answer any six questions)

6x5= 30 Marks

- 4 Explain the principles of pharmaceutical care.
- 5 Explain the content, design, and layout of patient information leaflet.
- 6 Explain the cause, mode of transmission, and clinical manifestation of typhoid.
- 7 Explain the manifestations of protein deficiency and write its treatment.
- 8 Explain the self screening procedure for the patients to monitor the blood glucose level.
- 9 Explain the lead time and safety stock in inventory control.
- 10 Define OTC drugs. Explain the role of community pharmacist in the sale and counselling of OTC drugs.
- 11 Explain the general treatment for a patient presenting with symptoms of constipation.

JSS UNIVERSITY, MYSURU

Second Year Pharm.D (RS 1) Examination - April/May 2017

Subject: Pharmacotherapeutics - I

Time: 3 hours

Max. Marks: 70

*Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary*

Section A: Multiple Choice Questions

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A

Note:

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions

20 x 1 = 20 Marks

- 1 Which of the following is the most appropriate blood pressure goal for a 65 year old African-American with hypertension and no other medical problems?
 - a) <140/90 mm Hg
 - b) <130/85 mm Hg
 - c) <130/80 mm Hg
 - d) <125/75 mm Hg
- 2 In order to minimize the risk of hypokalemia from diuretics, the most appropriate strategy would include :
 - a) limiting the dose of hydrochlorothiazide to 12.5 to 25 mg
 - b) using loop diuretics
 - c) using potassium sparing diuretics as the primary therapy
 - d) having all patients switch their dietary salt to potassium chloride salt substitutes
- 3 What is the most common cause of chronic obstructive pulmonary disease (COPD)?
 - a) air pollution
 - b) cigarette smoking
 - c) lung infection
 - d) lung allergy

- 4 The adult dose of oral theophylline used in asthma is :
 - a) 60-120 mg twice a day
 - b) 60-120 mg thrice a day
 - c) 250-500 mg twice a day
 - d) 250-500 mg thrice a day
- 5 Typical symptoms of chronic bronchitis:
 - a) repeated chest infection
 - b) reduced exercise capacity
 - c) chronic cough with mucus production
 - d) all of the above
- 6 What potential side effects would you mention to a patient recently started on nifedipine?
 - a) increased hair growth (hirsutism)
 - b) painful or swollen breasts (gynecomastia)
 - c) systemic lupus
 - d) leg oedema
- 7 Which one of the following LDL cholesterol levels is considered to be optimal?
 - a) 130 - 159 mg/dL
 - b) 160 - 189 mg/dL
 - c) 190 - 240 mg/dL
 - d) > 240 mg/dL
- 8 Which one of the following is not a coronary heart disease (CHD) risk equivalent?
 - a) diabetes
 - b) peripheral arterial disease
 - c) symptomatic carotid artery disease
 - d) smoking
- 9 Chemical messengers that are produced in one body region and affect a different body region:
 - a) enzymes
 - b) hormones
 - c) neurotransmitters
 - d) prostaglandins
- 10 The pituitary gland is located beneath the:
 - a) thalamus
 - b) cerebellum
 - c) cerebrum
 - d) hypothalamus

- 11 Which of the following hormone affects the physical appearance?
- a) steroids
 - b) growth hormone
 - c) gonadotropin releasing hormone (GRH)
 - d) oxytocin
- 12 The pancreatic islets produce :
- a) insulin and glucagon
 - b) steroids
 - c) aldosterone
 - d) vasopressin
- 13 Night blindness is caused by:
- a) central retinal vein occlusion
 - b) dystrophies of retinal rods
 - c) dystrophies of the retinal cones
 - d) retinal detachment
- 14 What is glaucoma?
- a) retinal damage from high intraocular pressure
 - b) optic nerve death caused by mechanical stretching forces
 - c) ischemic nerve damage from decreased blood perfusion gradients
 - d) None of the above
- 15 Aqueous humor is produced by:
- a) cornea
 - b) lens
 - c) ciliary body
 - d) conjunctive
- 16 Increased body fat in elderly, results in _____ volume of distribution for fat soluble compounds such as clomethiazole, diazepam.
- a) increased
 - b) decreased
 - c) no change in
 - d) slowly decreased
- 17 _____ is common in older patients and results from impaired baroreceptor function.
- a) diabetes mellitus
 - b) epilepsy
 - c) asthma
 - d) postural hypertension

- 18 What is appropriate dose of salbutamol for children?
- 2 mg/day
 - 4 mg/day
 - 10 mg/day
 - 24 mg/day
- 19 Of the following xanthines, this drug is the most effective bronchodilator:
- caffeine
 - xanthine
 - theobromine
 - theophylline
- 20 An example of a positive inotropic drug that acts by inhibiting myocardial phosphodiesterase :
- triamcinolone
 - amrinone
 - ouabain
 - tranylcypromine

Section B

LONG ESSAY (Answer any two questions)

2x10=20 Marks

- 1 Define and classify hypertension. Explain the aetiology, pathogenesis and pharmacotherapy of essential hypertension. (3+7)
- 2 Write the pathophysiology and management of chronic obstructive pulmonary disease (COPD). (5+5)
- 3 Explain the pathophysiology, diagnosis and management of hypothyroidism. (4+3+3)

Section C

SHORT ESSAY (Answer any six questions)

6x5= 30 Marks

- 4 Differentiate lung volume tests and capacities with an illustration.
- 5 Pharmacotherapy of glaucoma.
- 6 Classify angina pectoris and explain the role of isosorbide mononitrate.
- 7 Define rational drug use (RDU) Explain the role of pharmacist in RDU.
- 8 Explain the treatment algorithm for acute myocardial infarction.
- 9 Write a note on osteoporosis.
- 10 Explain the difference between type I and type II diabetes mellitus.
- 11 Write the general prescribing guidelines for paediatric patients.

JSS UNIVERSITY, MYSURU**Second Year Pharm.D (RS 1) Examination - April/May 2017****Subject: Community Pharmacy****Time: 3 hours****Max. Marks:**

*Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary*

Section A: Multiple Choice Questions

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A**Note:**

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions**20 x 1 = 20 Marks**

- 1 Expansion of HIV:
 - a) Human immuno virus
 - b) Human immune-syndrome virus
 - c) Human immune-acquired virus
 - d) Human immunodeficiency virus
- 2 Environmental barrier in patient counselling :
 - a) difference in the level of platform
 - b) lack of knowledge on the drugs and disease
 - c) perception of patient
 - d) lack of time for the patient
- 3 Which one of the following is available as OTC medicine :
 - a) paracetamol
 - b) amoxycillin
 - c) codeine phosphate
 - d) alprazolam
- 4 The gap between the ordering of stock and the receipt of the same is:
 - a) lead time
 - b) administration time
 - c) conveyance time
 - d) manufacturer's time

Verified
8/5/17

- 5 _____ can lead to medication nonadherence :
- a) complexity of the drug
 - b) patient counselling
 - c) generic products given
 - d) medication reminder cards
- 6 Confirmatory test of HIV is :
- a) Western blot test
 - b) ELISA test
 - c) Mantoux test
 - d) Widal test
- 7 Dyspepsia refers to :
- a) loose stools
 - b) indigestion
 - c) heart burns
 - d) diarrhoea
- 8 Vitamin K deficiency can lead to :
- a) scurvy
 - b) night blindness
 - c) bleeding
 - d) osteomalacia
- 9 Responsible provision of drug therapy by pharmacists to achieve therapeutic outcomes is called :
- a) pharmaceutical care
 - b) patient care
 - c) patient counselling
 - d) medication therapy management
- 10 Amoebiasis is treated with :
- a) diloxanide
 - b) chloramphenicol
 - c) chloroquine
 - d) levofloxacin
- 11 Drug used for typhoid :
- a) chloroquine
 - b) ciprofloxacin
 - c) rifampicin
 - d) dapsone

- 12 EOQ in inventory control stands for :
- a) equally ordered quantity
 - b) easily ordered quantity
 - c) economic order quantity
 - d) effectively organized quantity
- 13 Rx in prescription means :
- a) take thou
 - b) make thee
 - c) analyze thou
 - d) give thee
- 14 Safety stock :
- a) medicament stock used for saving life of the patient
 - b) minimum stock of medicine to be maintained to avoid depletion
 - c) stock of drugs to be safely moved
 - d) stock of medication to be kept in safe custody of the chief pharmacist
- 15 Slim disease is better known as :
- a) malaria
 - b) tuberculosis
 - c) AIDS
 - d) leprosy
- 16 Rickets is due to the deficiency of :
- a) vitamin A
 - b) vitamin D
 - c) vitamin E
 - d) protein
- 17 Widal test is done in case of :
- a) typhoid
 - b) malaria
 - c) leprosy
 - d) tuberculosis
- 18 ABC analysis of inventory control is based on :
- a) health needs of public
 - b) cost expenditure and consumption of drugs
 - c) lead time of the manufacturer
 - d) safety stock of drug to be in hand

- 5 _____ can lead to medication nonadherence :
- a) complexity of the drug
 - b) patient counselling
 - c) generic products given
 - d) medication reminder cards
- 6 Confirmatory test of HIV is :
- a) Western blot test
 - b) ELISA test
 - c) Mantoux test
 - d) Widal test
- 7 Dyspepsia refers to :
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 - c) heart burns
 - d) diarrhoea
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 - b) night blindness
 - c) bleeding
 - d) osteomalacia
- 9 Responsible provision of drug therapy by pharmacists to achieve therapeutic outcomes is called :
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 - b) patient care
 - c) patient counselling
 - d) medication therapy management
- 10 Amoebiasis is treated with :
- a) diloxanide
 - b) chloramphenicol
 - c) chloroquine
 - d) levofloxacin
- 11 Drug used for typhoid :
- a) chloroquine
 - b) ciprofloxacin
 - c) rifampicin
 - d) dapsone

JSS UNIVERSITY, MYSURU**Third Year Pharm.D (RS 1) Examination - April/May 2017****Subject: Pharmaceutical Analysis****Time: 3 hours****Max. Marks: 70**

*Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary*

Section A: Multiple Choice Questions

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A**Note:**

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions**20 x 1 = 20 Marks**

- 1 On dilution, the equivalent and molar conductivity of an electrolyte solution:
a) decreases
b) increases
c) depends on degree of dissociation
d) depends on the solvation of ions
- 2 One of the following is a strong adsorbent used in column chromatography :
a) magnesium carbonate
b) activated alumina
c) talc
d) sodium carbonate
- 3 The inner side of glass electrode is filled with :
a) 0.1N HCl
b) 0.1N KCl
c) 1M HCl
d) 1N HCl
- 4 The chromogenic reagent for detection of tannins in paper chromatography is :
a) Ninhydrin in acetone
b) 3,5- dinitro benzoic acid
c) ferric chloride
d) Dargendroff's reagent

- 5 The value of K_{ex} for divalent ions in ion exchange resins decreases in the order of :
- $Ba^{2+} > Sr^{2+} > Pb^{2+}$
 - $Ba^{2+} > Pb^{2+} > Sr^{2+}$
 - $Sr^{2+} > Pb^{2+} > Ba^{2+}$
 - $Sr^{2+} > Ba^{2+} > Pb^{2+}$
- 6 The limit of detection of UV visible absorbance detector in HPLC is :
- $10^{-1} \mu g/cm^3$
 - $10^{-4} \mu g/cm^3$
 - $10^{-6} \mu g/cm^3$
 - $10^{-10} \mu g/cm^3$
- 7 Which of the following gas chromatography (GC) detectors is non responsive to aliphatic and naphthenic hydrocarbons?
- thermal conductivity detector
 - electron capture detector
 - flame ionization detector
 - mass spectrometry
- 8 The electrophoretic mobility has the following unit :
- $Volt^{-1} s^{-1}$
 - Volt sec
 - $S^{-1} Volt^{-1}$
 - Volt
- 9 The porous silica used as gel in gel filtration is a :
- rigid gel
 - semi-rigid gel
 - soft gel
 - hard gel
- 10 Potential in mV for Silver -silver chloride electrode when filled with 0.1 N KCl at $25^\circ C$ is :
- 200
 - 285
 - 288
 - 400
- 11 The equivalent ionic conductance of H^+ ion at $25^\circ C$ is :
- 249.8
 - 349.8
 - 379.8
 - 389.8

- 12 Amperometry is considered to be more accurate than polarography because it is :
- more dependent upon the characteristics of capillary and the supporting electrolyte
 - less dependent upon the characteristics of capillary and the supporting electrolyte
 - not dependent upon the characteristics of capillary and the supporting electrolyte
 - less dependent upon the characteristics of capillary only
- 13 The basic value of homoannular conjugated diene is :
- 215 m μ
 - 253 m μ
 - 273 m μ
 - 280 m μ
- 14 For the detection of aldehydes and ketones, one of the following is the more authentic transition :
- $\pi \rightarrow \pi^*$
 - $n \rightarrow \pi^*$
 - $\sigma \rightarrow \pi^*$
 - $\sigma \rightarrow \sigma^*$
- 15 The complimentary filter for red solution is :
- orange
 - blue
 - green
 - violet
- 16 In case of acids, the O-H stretch absorption band is very broad and appears between :
- 3000 - 2500 cm⁻¹
 - 2500 - 2300 cm⁻¹
 - 2300 - 2000 cm⁻¹
 - 2000 - 1500 cm⁻¹
- 17 Fluorescence efficiency is defined as
- ratio of EMR quanta absorbed to that of fluorescence quanta emitted
 - ratio of fluorescence quanta emitted to that of EMR quanta absorbed
 - ratio of fluorescence emitted by fluorescent compound to that of fluorescence emitted by non-fluorescent compound
 - ratio of fluorescence emitted by non-fluorescent compound to that of fluorescence emitted by fluorescent compound.
- 18 Sodium ions on excited with thermal energy emits light of wavelength
- 480 nm
 - 589 nm
 - 620 nm
 - 650 nm

- 19 Cyclobutane will show _____ number of NMR signals.
- a) 1
 - b) 3
 - c) 4
 - d) 6
- 20 In mass spectrometry, the peak normally with highest mass to charge value is known as :
- a) parent peak
 - b) base peak
 - c) M+1 peak
 - d) M+2 peak

Section B

LONG ESSAY (Answer any two questions)

2x10=20 Marks

- 1 Write the reasons for derivatization in gas chromatography (GC). (3+7)
Explain the methods of derivatization in GC with suitable examples.
- 2 Explain the construction and working of glass and calomel electrode. (5+5)
- 3 Explain the theory of ultraviolet (UV) and visible spectroscopy in brief. (5+5)

Section C

SHORT ESSAY (Answer any six questions)

6x5= 30 Marks

- 4 Define the term validation. Explain validation of any one analytical instrument.
- 5 Write the applications of column chromatography.
- 6 Differentiate column chromatography with high-performance liquid chromatography (HPLC).
- 7 Explain the principle of Karl Fischer titration with an example.
- 8 List the application of conductometric titrations.
- 9 Explain the construction and working of Golay cell detector.
- 10 Explain the physicochemical properties that affect fluorescence.
- 11 Explain the principle and applications of flame photometry.

JSS UNIVERSITY, MYSURU**Third Year Pharm.D (RS 1) Examination - April/May 2017****Subject: Pharmacotherapeutics- II****Time: 3 hours****Max. Marks: 70**

*Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary*

Section A: Multiple Choice Questions

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A**Note:**

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions**20 x 1 = 20 Marks**

- 1 The condition associated with the highest risk of developing infective endocarditis is :
 - a) mitral valve prolapse with regurgitation
 - b) the presence of a prosthetic heart valve
 - c) rheumatic fever without valvular defects
 - d) intravenous drug abuse
- 2 In a patient with subacute endocarditis, which of the following laboratory findings do not support the diagnosis :
 - a) normocytic normochromic anemia
 - b) proteinuria
 - c) thrombocytopenia
 - d) decreased erythrocyte sedimentation rate
- 3 Which of the following is least likely to cause infective endocarditis?
 - a) Staphylococcus albus
 - b) Streptococcus faecalis
 - c) Salmonella typhi
 - d) Pseudomonas aeruginosa
- 4 In which of the following arthritis erosions are not seen?
 - a) rheumatoid arthritis
 - b) systemic lupus erythematosus
 - c) psoriasis
 - d) gout

- 5 Which is not a recommended regimen for treatment of UTI in the non-pregnant woman?
- a) trimethoprim 300 mg orally daily for 5 days
 - b) nitrofurantoin 50 mg qid for 5 days
 - c) augmentin duo orally bid for 5 days
 - d) cephalexin 500 mg orally bid for 5 days
- 6 Which of the following is a protease inhibitor?
- a) enfuvirtide
 - b) lamivudine
 - c) nevirapine
 - d) saquinavir
- 7 Malaria is caused by :
- a) Entamoeba histolytica
 - b) Leishmania
 - c) Clostridium
 - d) Plasmodium
- 8 A keratolytic agent that helps reduce scaling :
- a) salicylic acid
 - b) dithranol
 - c) tazarotene
 - d) tacalcitol
- 9 In children with eczema :
- a) IgE is raised in most cases
 - b) IgE is decreased in most cases
 - c) IgG is raised in most cases
 - d) IgG is decreased in most cases
- 10 Which of the following tests are banned for diagnosis of tuberculosis?
- a) culture
 - b) ELISA
 - c) PCR
 - d) LPA
- 11 HIV belongs to which of the following families of virus?
- a) adenovirus
 - b) togavirus
 - c) reovirus
 - d) lentivirus
- 12 Which of the following is the major mechanism of drug induced renal problems?
- a) direct toxicity on renal cell
 - b) condition within patients that lead to deterioration in renal function.
 - c) immunologic reactions
 - d) mechanical obstruction

- 13 Which of the following electrolytes usually must be *restricted* in patients with acute renal failure?
- a) chloride
 - b) potassium
 - c) bicarbonate
 - d) calcium
- 14 System lupus erythematous is a :
- a) connective tissue disorder
 - b) skin disorder
 - c) metabolic disorder
 - d) genetic disorder
- 15 _____ is coin shaped eczema.
- a) endogenous eczema
 - b) atopic eczema
 - c) infantile eczema
 - d) nummular eczema
- 16 Tuberculosis is transmitted through:
- a) infected water
 - b) infected hands
 - c) infected blood
 - d) infected air
- 17 Most common cause of disseminated opportunistic infection in AIDS patients in western world is:
- a) *M avium intracellulare* complex
 - b) *Pneumocystis carinii*
 - c) *Cryptosporidium*
 - d) *Zygomycetes*
- 18 The drug known to directly damage renal tubules is :
- a) acyclovir
 - b) clindamycin
 - c) streptomycin
 - d) vancomycin

19 The drug known to cause highest risk of hepatitis is :

- a) pyrazinamide
- b) rifampicin
- c) streptomycin
- d) vancomycin

20 Stavudine is used in the treatment of :

- a) AIDS
- b) malaria
- c) typhoid
- d) dengue

Section B

LONG ESSAY (Answer any two questions)

2x10=20 Marks

- 1 a) What are the general guidelines for the rational use of antibiotics? (5+5)
b) Explain the therapeutic management of fungal infections.
- 2 Explain the aetiology and pharmacotherapy of acute renal failure.
- 3 Explain basic principles of cancer chemotherapy and management of chemotherapy induced nausea and vomiting.

Section C

SHORT ESSAY (Answer any six questions)

6x5= 30 Marks

- 4 Management of chronic renal failure.
- 5 Explain the pathogenesis and pharmacotherapy of rheumatoid arthritis.
- 6 Explain the management of tuberculosis.
- 7 Explain the general principles of treatment of AIDS.
- 8 Write a note on life cycle of malaria.
- 9 Write a note on systemic lupus erythematosus (SLE).
- 10 Explain the role of phototherapy in psoriasis.
- 11 Explain the management of urinary tract infections.

JSS UNIVERSITY, MYSURU**Third Year Pharm.D (RS 1) Examination - April/May 2017****Subject: Pharmaceutical Jurisprudence****Time: 3 hours****Max. Marks: 70**

*Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary*

Section A: Multiple Choice Questions

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A**Note:**

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions**20 x 1 = 20 Marks**

- 1 Joseph Bhore committee is also known as :
 - a) Health Survey and Development Committee
 - b) Health Survey and Planning Committee
 - c) Drugs Enquiry Committee
 - d) Indian Pharmacopoeial Committee
- 2 Spurious drugs means :
 - a) it is not labelled in prescribed manner
 - b) it is imported under a name which belongs to another drug
 - c) it contains a drug other than one which is prescribed
 - d) a substance has been added so as to reduce its quality or strength
- 3 Schedule S is :
 - a) standards for patent and proprietary medicines
 - b) standards for medical devices
 - c) standards for cosmetics
 - d) standards for mechanical contraceptives

- 4 Excise officer in charge of bonded laboratory may permit the manufacturer to take duty free samples of :
- 100 ml of alcohol for analysis purpose
 - 250 ml for analysis purpose
 - 350 ml for analysis purpose
 - 500 ml for analysis purpose
- 5 Narcotic Drugs and Psychotropic Substances (NDPS) Act came into effect from :
- 1st Jan 1985
 - 31st March 1985
 - 1st April 1985
 - 14th November 1985
- 6 Drugs intended for non-medicinal use should be labelled conspicuously with the words :
- For therapeutic use only
 - Not for medicinal use
 - Not for human use for animal use only
 - Physicians sample not to be sold
- 7 Coca derivative means :
- leaf of the coca plant except a leaf from which all ecgonine and any other ecgonine alkaloids have been removed
 - crude cocaine is extract of coca leaf which can be used directly or indirectly for manufacture of cocaine
 - any mixture with or without any neutral material but does not include any preparation containing not more than 0.1 % cocaine
 - phenanthrene alkaloids namely morphine, codeine, thebaine and their salts
- 8 Government fixes the prices for scheduled formulations based on their _____
- ceiling price
 - retail price
 - generic price
 - whole sale price
- 9 In which year Prevention of Cruelty to Animals Act was enacted?
- 1940
 - 1955
 - 1960
 - 1970
- 10 Cultivation or production of opium or poppy straw can be undertaken with a licence for the purpose granted by :
- District opium officers
 - Central government
 - Narcotic commissioner
 - Government opium factory

- 11 Substances specified in _____ are exempted from provisions relating to import of drugs :
- Schedule H
 - Schedule G
 - Schedule E
 - Schedule D
- 12 Ayurvedic preparations containing self-generated alcohol in which alcohol content not exceeding _____ are deemed to be non alcoholic for the purpose of the Act.
- 1% proof spirit
 - 2% proof spirit
 - 4% proof spirit
 - 5 % proof spirit
- 13 First schedule to D & C Act 1940 pertains to names of books under :
- Siddha system of medicine
 - Ayurvedic system of medicine
 - Allopathic system of medicine
 - Ayurvedic and Siddha system of medicine
- 14 London Proof spirit means mixture of ethyl alcohol and distilled water which at 51 degrees Fahrenheit is equal to _____ parts of an equal volume of distilled water at same temperature.
- 12/14
 - 12/13
 - 13/14
 - 13/12
- 15 Nominated and elected members of Drugs Technical Advisory Board (DTAB) will hold the office for :
- 3 years
 - 4 years
 - 5 years
 - 6 years
- 16 Mumbai port is the place from where drugs are imported :
- by sea into India
 - from Srilanka into India
 - from Pakistan into India
 - from Bangladesh into India
- 17 Schedule M :
- requirements of factory premises for manufacture of cosmetics
 - good manufacturing practices and requirements of factory premises for plants and equipments
 - requirements of factory premises for manufacture of homeopathic drugs
 - requirements of factory premises for manufacture of medical devices

- 18 Retail sale for schedule X is issued in :
- a) Form 20 F
 - b) Form 20 G
 - c) Form 21 A
 - d) Form 21 B
- 19 Which Patent Act provides product patent for a medicine or drug?
- a) Patent Act 1970
 - b) Patent Act 1999 amendment
 - c) Patent Act 2000 amendment
 - d) Patent Act 2005 amendment
- 20 Term of copy right is :
- a) 10 years
 - b) 30 years
 - c) 50 years
 - d) 60 years

Section B

LONG ESSAY (Answer any two questions)

2x10=20 Marks

- 1 Write the classes of drugs that are imported to India. Explain import of drugs for personal use. Write a note on offences and penalties under the Act. (3+3+4)
- 2 Explain Prevention of Cruelty to Animal Act.
- 3 Describe the advisory agencies that should be constituted under Drugs & Cosmetics Act. Write a note on Central Drugs Laboratory (CDL). (6+4)

Section C

SHORT ESSAY (Answer any six questions)

6x5= 30 Marks

- 4 Explain the code of ethics a pharmacist should follow in relation to his job.
- 5 Explain the constitution of State Pharmacy Council.
- 6 Explain export of alcoholic preparations under bond.
- 7 Enumerate patentable and non-patentable inventions.
- 8 Write the recommendations of Chopra Committee.
- 9 Explain the salient features of Pharmaceutical Policy 2002.
- 10 Write a note on fixation of retail price of formulations.
- 11 Classes of exempted advertisements under Narcotic Drugs and Psychotropic Substances (NDPS) Act.

JSS UNIVERSITY, MYSURU**Third Year Pharm.D (RS 1) Examination - April/May 2017****Subject: Medicinal Chemistry****Time: 3 hours****Max. Marks: 70**

*Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary*

Section A: Multiple Choice Questions

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A**Note:**

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions**20 x 1 = 20 Marks**

- 1 Which among the following appears to play an important role in the extra-hepatic metabolism of xenobiotics?
 - a) kidney
 - b) intestine
 - c) skin
 - d) lungs
- 2 Which of the following is a non-thiol containing prodrug?
 - a) enalapril
 - b) nifedipine
 - c) isradipine
 - d) diltiazem
- 3 Which among the following was NOT isolated from a natural source?
 - a) quinine
 - b) morphine
 - c) isoniazid
 - d) artemisinin
- 4 Which of the following is a natural chemical messenger for the adrenergic receptor?
 - a) acetylcholine
 - b) dopamine
 - c) serotonin
 - d) noradrenaline

- 5 Substitution of N1 by methyl group in barbiturates causes :
- a) increase in lipid solubility
 - b) decreased toxicity
 - c) increased activity
 - d) decreased activity
- 6 Which of the following statements pertaining to fluconazole is correct?
- a) heterocyclic groups with more nitrogen atoms leads to low polarity.
 - b) high polarity decreases water solubility.
 - c) fluorine substituents increase water solubility
 - d) alcohol group increases polarity
- 7 Antihypertensive with a tetrazole ring is :
- a) clonidine
 - b) captopril
 - c) valsartan
 - d) carbapenams
- 8 The substituents attached to the aromatic ring of a drug may influence the ease of :
- a) Decarboxylation
 - b) Keto-enol tautomerism
 - c) hydroxylation
 - d) demethylation
- 9 Prostaglandins are synthesized in the body from :
- a) myristic acid
 - b) stearic acid
 - c) arachidonic acid
 - d) lignoceric acid
- 10 Sulfa drugs are assayed by which type of titration?
- a) acid-base titration
 - b) redox titration
 - c) diazotization titration
 - d) non aqueous titration
- 11 Which among the following drug interferes gluconeogenesis ?
- a) metformin
 - b) glimepride
 - c) theophylline
 - d) salbutamol

- 12 Carbonic anhydrase is competitively inhibited by :
- a) allopurinol
 - b) acetazolamide
 - c) aminopterin
 - d) neostigmine
- 13 Which of the following reaction, is catalysed by a β -lactamase enzyme?
- a) final cross-linking reaction to form the bacterial cell wall
 - b) hydrolysis of the acyl side chain from penicillin structures
 - c) hydrolysis of the four-membered ring present in penicillins
 - d) biosynthesis of the penicillin structure from the amino acids valine and cysteine
- 14 What is meant by a lead compound in medicinal chemistry?
- a) a drug containing the element lead
 - b) a leading drug in a particular area of medicine
 - c) a compound that acts as the starting point for drug design and development
 - d) a drug which is normally the first to be prescribed for a particular ailment
- 15 Clavulanic acid is beta ring fused with :
- a) thienyl system
 - b) oxazolidine system
 - c) thiazolidine system
 - d) thiadiazole system
- 16 Which of the following statements is true regarding the properties of benzyl penicillin?
- a) It is a bacteriostatic agent.
 - b) It is active over a wide range of bacterial species
 - c) It is resistant to β -lactamases
 - d) certain individuals may have an allergic response to it
- 17 Which of the following drugs can be used for lymphatic filariasis?
- a) Ivermectin
 - b) dihydroemetine
 - c) amloride
 - d) metronidazole
- 18 A macrolide antibiotic which is used as a powerful immunosuppressive agent :
- a) erythromycin
 - b) tacrolimus
 - c) azithromycin
 - d) clarithromycin

- 19 Which among the following is an alpha glucosidase enzyme inhibitor :
- a) chloroguanide
 - b) capreomycin
 - c) acarbose
 - d) tolbutamide
- 20 Which among the following is a plant product used as an antineoplastic agent?
- a) cisplatin
 - b) etoposide
 - c) mannitol
 - d) cytarabine

Section B

LONG ESSAY (Answer any two questions)

2x10=20 Marks

- 1 What are macrolide antibiotics? Explain the chemistry and structure activity relationship (SAR) of tetracyclines. Outline the synthesis of chloramphenicol? (2+4+4)
- 2 Explain antiarrhythmic agents. Explain the chemistry of 1, 4 - dihydropyridine derivatives as calcium channel blockers. Write note on synthesis and mechanism of action of any one beta blocker. (3+4+3)
- 3 Classify diuretics. Write the chemistry, mechanism of action and SAR of thiazide diuretics. Outline the synthesis of acetazolamide. (3+4+3)

Section C

SHORT ESSAY (Answer any six questions)

6x5= 30 Marks

- 4 Write a note on aetiology of malaria. Write the synthesis of pamaquine.
- 5 Define and classify antineoplastic agents with examples.
- 6 Write the structure of any four urinary tract anti-infective drugs. Outline the synthesis of ciprofloxacin.
- 7 Explain the SAR of sulfonamides. Write synthesis and mechanism of action of sulfacetamide.
- 8 Write a note on loop diuretics. Outline the synthesis of frusemide.
- 9 Write notes on:
 - a) Benzimidazoles as anthelmintics
 - b) Cationic surfactants as local anti-infective agents.
- 10 Explain angiotensin converting enzyme inhibitors and adrenergic agents as antihypertensives.
- 11 Write a short account on steroidal sex hormones.

JSS UNIVERSITY, MYSURU**Third Year Pharm.D (RS 1) Examination - May 2017****Subject: Pharmaceutical Formulations****Time: 3 hours****Max. Marks: 70**

*Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary*

Section A: Multiple Choice Questions

20 Marks

Section B: Long Essay

20 Marks

Section C: Short Essay

30 Marks

Section A**Note:**

1. Answer ALL the questions in the OMR Sheet given by using BLACK/BLUE BALL POINT PEN ONLY
2. Choose the ONE CORRECT ANSWER from the 4 choices given for each question.
3. Maximum time for answering Section – A is 20 minutes.
4. At the end of 20 minutes submit the OMR sheet to the Invigilator.

Multiple Choice Questions**20 x 1 = 20 Marks**

- 1 The shells of soft gelatin capsules may be made elastic or plastic like by the addition of:
 - a) povidone
 - b) sorbitol
 - c) poly ethylene glycol
 - d) hydroxyl propyl methyl cellulose
- 2 Which of the following is NOT a semisolid dosage form?
 - a) paste
 - b) cream
 - c) ointment
 - d) suspension
- 3 For an ideal emulsion, maximum concentration of internal phase is :
 - a) 50%
 - b) 66%
 - c) 74%
 - d) 80%
- 4 In dissolution test, flask is maintained at a temperature of :
 - a) $37^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$
 - b) $39^{\circ}\text{C} \pm 0.5^{\circ}\text{C}$
 - c) $40^{\circ}\text{C} \pm 1^{\circ}\text{C}$
 - d) $41^{\circ}\text{C} \pm 1^{\circ}\text{C}$

- 5 The phenomena of administration of large volume of fluid by sub cutaneous injection are called as:
- a) hyperdermolysis
 - b) transcutaneolysis
 - c) hypodermolysis
 - d) iontophoresis
- 6 Intra dermal injection refers to injection into the:
- a) muscle mass
 - b) subcutaneous tissue
 - c) superficial skin layer
 - d) spinal fluid
- 7 Macrogol is:
- a) aqueous base
 - b) oily base
 - c) emulsion base.
 - d) hydroalcoholic base
- 8 Half life of drug should be _____ for transdermal drug delivery system.
- a) short
 - b) medium
 - c) long
 - d) very long
- 9 Shrinkage of gels by extrusion of liquid is called as:
- a) coacervation
 - b) dilatancy
 - c) syneresis
 - d) ebullition
- 10 Friabilator is operated at the speed of :
- a) 25 rpm
 - b) 50 rpm
 - c) 75 rpm
 - d) 100 rpm
- 11 In tablet coating process, inadequate spreading of coating solution before drying causes:
- a) blistering effect
 - b) sticking effect
 - c) orange peel effect
 - d) picking effect

- 12 The rate of creaming of an emulsion is NOT affected by:
- a) globule size
 - b) viscosity of dispersion medium
 - c) temperature
 - d) volume
- 13 Rotosort is equipment used to:
- a) separate unfilled capsules
 - b) fix cap and body
 - c) separate improper tablets
 - d) adjust compression of tablets
- 14 Before washing ampoules, the mouth of each capsule is rotated in Bunsen flame to melt down the rough edges. This process is called as:
- a) flaming
 - b) annealing
 - c) charging
 - d) grounding
- 15 Which of the following is an example of an opacifier ?
- a) magnesium oxide
 - b) titanium dioxide
 - c) silicates
 - d) magnesium carbonate
- 16 Enteric coated tablet is disintegrated in:
- a) stomach
 - b) mouth
 - c) large intestine
 - d) small Intestine
- 17 The particle size of the dispersed solid in a suspension is usually greater than:
- a) 0.1 μ
 - b) 0.3 μ
 - c) 0.4 μ
 - d) 0.5 μ
- 18 An equal volume of air is injected when removing drug solution from :
- a) ampoules
 - b) vials
 - c) intravenous infusion bottles
 - d) syringes

- 19 Which of the following is a natural emulsifying agent?
- a) lactose
 - b) acacia
 - c) polysorbate
 - d) spans
- 20 The mechanism of drug absorption of transdermal drug delivery system is:
- a) diffusion
 - b) osmosis
 - c) dissolution
 - d) disintegration

Section B

LONG ESSAY (Answer any two questions)

2x10=20 Marks

- 1 What are occuserts? Explain the design of erodible occuserts. (2+8)
- 2 Explain wet granulation and dry granulation process in the manufacture of tablets.
- 3 Explain the formulation of parenteral dry powders and parenteral suspensions.

Section C

SHORT ESSAY (Answer any six questions)

6x5= 30 Marks

- 4 Write the manufacturing defects of tablets.
- 5 Explain the formulation and filling of hard gelatin capsules.
- 6 Write a note on vehicles used in parenterals.
- 7 Explain the formulation of suspensions.
- 8 Classify monophasic liquids dosage forms with examples.
- 9 Write a note on implants.
- 10 Explain the methods of sterilization of parenterals.
- 11 Define gels. Explain the formulation requirements of gels.
