

Program	Bachelor of Pharmacy	
Subject Name	Social and Preventive Pharmacy	Semester VIII
		Year June, 2024

• Start writing from 2nd page onwards; don't Write on the 1st Page Backside

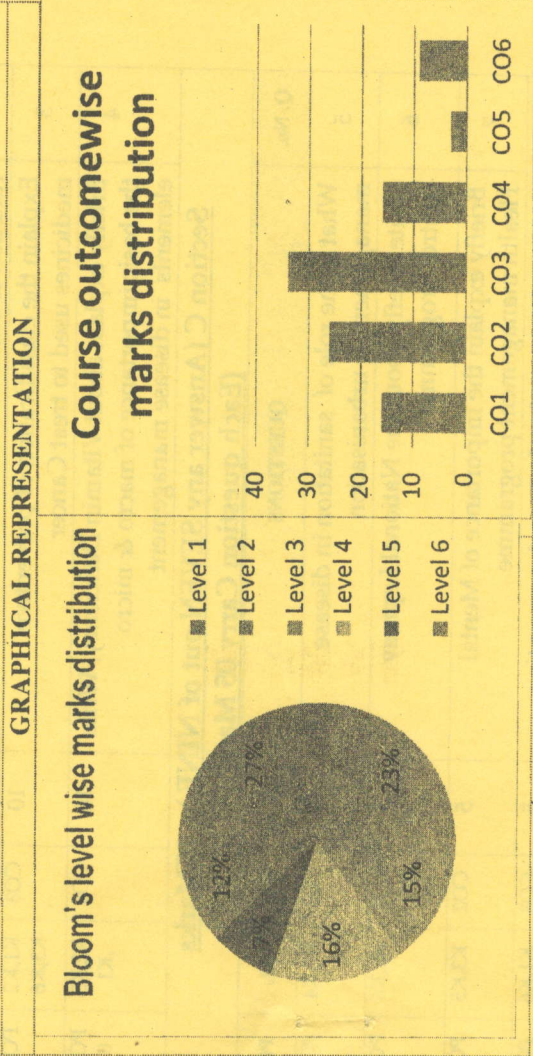
- Answer all Questions of Section A (Compulsory)
- Answer Any Two out of Three of Section B
- Answer Any Seven out of Nine of Section C
- Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will come under Unfair Means and will Result in the Cancellation of the Papers.

Time: 3 Hour
Max. Marks : 75

Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Q.N1	QUESTIONS	Marks	COs	KL	PO
i	What is the additive drug in tobacco a) Ethanol c) Ammonia d) Tar	1	CO5	K2,K1	PO9
ii	Which one of these is a viral disease? a) Influenza c) Diabetes	1	CO3	K2,K1	PO1
iii	The daily requirements of Trace elements is less than-----per day a) 10mg c) 100mg	1	CO5	K5,K1	PO2
iv	The maximum loss of water ----liter/day through urination a) 3-4 liter/day c) 5-10 liter/day	1	CO2	K5	PO2
v	-----are used to administer drugs in various respiratory obstructive diseases a) Aerosol therapy c) Steam Vapouriser	1	CO3	K2,K1	PO1
vi	The central rural sanitation program was launched in..... a) 1980 c) 1986	1	CO1	K1	PO2

CO- Course Outcomes,	KL- Knowledge Level,	PO - Program Outcome
CO1	Acquire high consciousness/ realization of current issues related to health	
CO2	Get knowledge about pharmaceutical problems within the country and worldwide	
CO3	Understand about various preventive medicines	
CO4	Have a critical way of thinking based on current healthcare development	
CO5	Evaluate alternative ways of solving problems related to health and pharmaceutical issues	
CO6	Design a better health care service system	



vii	Mosquito responsible for malaria transmission a) Aedes aegypti b) Aedes albopictus c) Anopheles	1	CO4	K1,K3	PO1
viii	The excessive intake of calcium in our diet results in a) Stroke b) Diarrhoea c) Constipation d) Kidney stone	1	CO2	K1,K4	PO1
ix	Which helps in regulation of blood volume and blood pressure a) Iron b) Iodine c) Sodium d) Phosphorus	1	CO4	K2,K3	PO1 0
x	Fat soluble vitamins are stored in the a) Kidney b) Tissue c) Lungs d) Liver	1	CO4	K2,K4	PO1
xi	Who coined the term Vitamin a) Galilio b) C.Funk c) Albert d) Marie curie	1	CO3	K1,K2	PO2
xii	How many essential vitamins help in controlling the metabolic process of the body a) 20 b) 12 c) 10 d) 13	1	CO3	K1,K2	PO1
xiii	The leading cause of Blindness in children worldwide a) Cataract b) Glaucoma c) Vitamin A&D deficiency d) Colour blindness	1	CO1	K1,K2	PO2
xiv	Which of the following is a air born disease a) Diphtheria b) Filariasis c) Influenza	1	CO3	K1,K2	PO1
xv	Primary object of immunization program is to a) Prevent infection b) Cure Disease c) Treatment d) None of these	1	CO2	K1,K2	PO2
xvi	-----is the compound of carbon ,Hydrogen and Nitrogen a) Vitamin-C b) Vitamin-A c) Vitamin-B6 d) Vitamin-B	1	CO2	K2,K3	PO2
xvii	-----is also known as Vitamin -B5 or Pantothenate and is water soluble a) Cobalamine b) Folic acid c) Pyridoxine d) Vitamin B12	1	CO2	K2,K3	PO2
xviii	Which of the following is a viral disease a) Diphtheria b) Filariasis c) Leprosy d) Influenza	1	CO1 ,CO 3	K4,K5	PO2

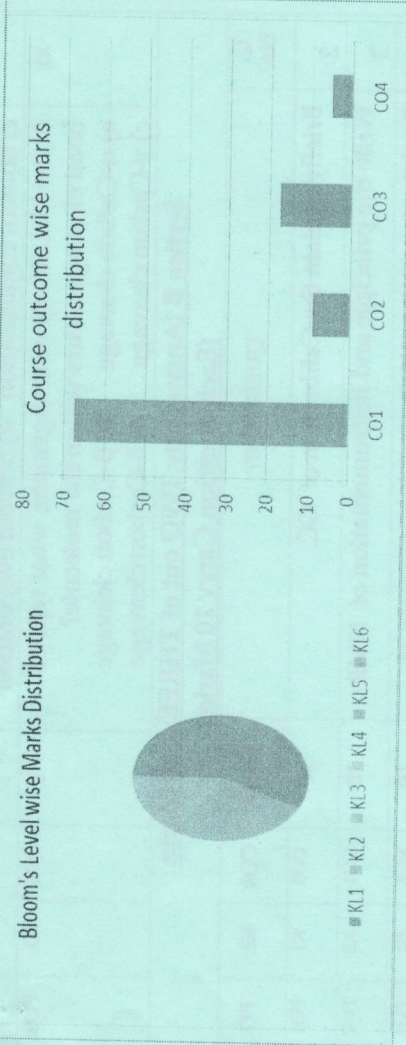
xix	Objective of vaccination program is to a) Prevent infection b) Control Disease c) Both A&B d) None of these	1	CO4	K4,K5	PO1
xx	-----is also known as Folicin or Vitamin B9 a) Folic acid b) Biotin c) Pantothenate d) Lipoic acid	1	CO4	K4,K5	PO1
Section B (Answer any TWO out of THREE) – 20 Marks (Each question Carry 10 Marks)					
Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Explain the importance National Pulse-Polio-Programme with their basic Objectives, function & outcomes	10	CO2	K1,K2 ,K4	PO1
3	Explain the classification of preventive medicines used to treat Cancer	10	CO3	K1,K2 K3,K6	PO2
4	Briefly explain about Vitamin Deficiency, Write the basic importance of macro & micro elements in disease management	10	CO4	K2,K5 ,K1	PO1 0
Section C (Answer any SEVEN out of NINE) – 35Marks (Each question Carry 05 Marks)					
Q. No.	QUESTIONS	Marks	COs	KL	PO
5	What is the role of sanitation in disease management & urbanisation *	5	CO1	K2,K4	PO1
6	Write briefly about the National Leprosy control programme	5	CO1 ,CO 2	K1,K6	PO2
7	Briefly explain the importance of Mental Health management programme	5	CO2	K3,K5	PO1
8	Explain the control technique & preventive measure for Lymphatic filariasis	5	CO3	K1,K6	PO2
9	Write briefly about socio-cultural factors related to health and disease	5	CO3 ,CO 2	K1,K2	PO2
10	Explain briefly about National AIDS control programme	5	CO3	K3,K6	PO4
11	Explain the role National Blindness control and prevention programs	5	CO3	K1,K3 ,K4	PO7
12	Write briefly about National TB control and prevention programs	5	CO6	K6,K2 ,K3,	PO2
13	Explain the importance of Nutrition and Balanced Diet	5	CO3 ,CO	K1,K3	PO2


7	Write a note on different types of mass peaks.	5	CO1	K3	PO2
8	Explain the principle of DSC and write the factors affecting DSC.	5	CO1	K1	PO1
9	Briefly explain the information which we get from the ¹ H NMR spectra.	5	CO1	K2	PO1
10	Explain the different types of scanning done in LC-MS/MS.	5	CO4	K1	PO1
11	Write a note on MALDI.	5	CO1	K1	PO2
12	Define chemical shift. Explain various factors affecting chemical shift.	5	CO1	K1	PO2
13	Write a note on Radioimmuno Assay (RIA).	5	CO1	K3	PO1

CO- Course Outcomes, **KL-** Knowledge Level, **PO** – Program Outcome


Course	CO1	Understand the advanced instruments used and its applications in drug analysis
Outcomes	CO2	Understand the chromatographic separation and analysis of drugs.
	CO3	Understand the calibration of various analytical instruments
	CO4	Know analysis of drugs using various analytical instruments.

GRAPHICAL REPRESENTATION





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END SEM EXAMINATION
School of Health & Allied Science

Program	Bachelor of Pharmacy	
Subject Name	Advanced Instrumentation Techniques	Semester VIII Year June 2024
Time: 3 Hour Max. Marks : 75	<ul style="list-style-type: none"> Start writing from 2nd page onwards; don't write on the 1st Page Backside Answer all Questions of Section A (Compulsory) Answer Any Two out of Three of Section B Answer Any Seven out of Nine of Section C Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Papers.</u> 	
Knowledge Level (KL)	K1 : Remembering K2 : Understanding K3 : Applying K4 : Analysing K5 : Evaluating K6 : Creating	

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	The quadrupole mass analyzer separates ions based on their: a) Mass-to-charge ratio (m/z) c) Charge Highest m/z peak in mass spectrum is called as a) Base peak c) Isotopic peak	1	CO1	K1	PO2
ii	Thermogravimetry (TG) is concerned with the change in weight of a material as its..... Changes. a) Pressure c) Frequency b) Temperature d) all	1	CO1	K1	PO2
iii	With the help of which of the following equations is the distance calculated from a known wavelength of the source and measured angle? a) Coolidge equation c) Debye equation	1	CO1	K1	PO1
iv	The distance between the centers of the peaks of doublet is called as? a) Coupling constant c) Spin-spin coupling b) Spin constant d) Chemical shift	1	CO1	K1	PO1
v	The distance between the centers of the peaks of doublet is called as? a) Coupling constant c) Spin-spin coupling b) Spin constant d) Chemical shift	1	CO1	K1	PO2

vi	Which of the following factors does NOT influence the efficiency of liquid-liquid extraction? a) Temperature b) Pressure c) pH d) Mixing time	1	CO1	K2	PO1
vii	The principle behind RIA is based on: a) Precipitation reactions b) Agglutination reactions c) Competitive binding between a radioactive-labeled antigen and an unlabeled antigen d) Enzyme-substrate interactions	1	CO2	K3	PO2
viii	Retrospective validation is conducted: a) Prior to implementation of a new process b) During routine production operations c) After the process has been in use for some time d) In parallel with the development of a new process	1	CO3	K1	PO1
ix	Which thermal analysis technique is commonly used for studying decomposition reactions and thermal stability? a) Thermogravimetric Analysis (TGA) b) Differential Scanning Calorimetry (DSC) c) Differential Thermal Analysis (DTA) d) Thermomechanical Analysis (TMA)	1	CO1	K1	PO1
x	Which of the following solvent is not used in NMR? a) D ₂ O b) CHCl ₃ c) CCl ₄ d) CDCl ₃	1	CO1	K2	PO1
xi	Which species of the following is used to bombard with the sample for which mass spectroscopy has been performed? a) Alpha particles b) Neutrons c) Electrons d) Protons	1	CO1	K2	PO1
xii	Separation of ions in mass spectrometer take place on the basis of which of the following? a) Mass b) Charge c) Molecular weight d) Mass to charge ratio	1	CO1	K3	PO1
xiii	In UV-visible spectroscopy calibration, which of the following is NOT typically calibrated? a) Wavelength accuracy b) Absorbance linearity c) Flow rate precision d) Stray light	1	CO3	K3	PO1
xiv	Which of the following is NOT a commonly used solvent in liquid-liquid extraction? a) Water b) Chloroform c) Hexane d) Sodium hydroxide solution	1	CO2	K1	PO2

xv	Chemical shift in NMR spectroscopy is measured in: a) KiloHertz (kHz) b) Parts per million (ppm) c) Tesla (T) d) Hertz (Hz)	1	CO1	K1	PO1
xvi	What parameter is typically adjusted during the calibration process to ensure accurate wavelength measurements? a) Display brightness b) Wavelength accuracy c) Sensitivity d) Tare weight	1	CO1	K2	PO1
xvii	In a proton NMR spectrum, if a signal is split into a triplet, how many equivalent neighboring protons are present? a) 1 b) 2 c) 3 d) 4	1	CO1	K1	PO1
xviii	Which term describes the process of fragment ions losing small neutral molecules such as water or ammonia? a) Rearrangement b) Ionization c) Neutralization d) McLafferty rearrangement	1	CO1	K1	PO2
xix	Liquid-liquid extraction is based on the principle of: a) Solvent displacement b) Solvent partitioning c) Solvent condensation d) Solvent evaporation	1	CO2	K2	PO2
xx	In the McLafferty rearrangement, what type of bond cleavage occurs within the molecule? a) α -Carbon cleavage b) β -Carbon cleavage c) γ -Carbon cleavage d) δ -Carbon cleavage	1	CO1	K1	PO2

Section B (Answer any TWO out of THREE) – 20 Marks

(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Briefly explain the Calibration of GC.	10	CO3	K1	PO1
3	Write the principle and instrumentation of NMR.	10	CO1	K2	PO2
4	Explain the origin of X-rays and write a note on the powdered crystal method.	10	CO1	K1	PO1

Section C (Answer any SEVEN out of NINE) – 35Marks

(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
5	Explain in detail about the solid phase extraction (SPE) techniques.	5	CO2	K1	PO2
6	Write a note on FAT and SAT.	5	CO3	K1	PO1

Section C (Answer any Seven out of Nine) 35 Marks
(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
5	Give a Short note on Pharmacovigilance Program of India (PvPI).	5	CO4	K4, K6	PO10
6	Discuss about Genetic related ADR.	5	CO2	K2	PO1
7	Explain the Periodic Safety Update Reports (PSUR).	5	CO4	K3	PO3
8	Discuss Drug Safety evaluation in case of Pregnancy.	5	CO4	K2	PO9
9	Discuss on effective communication in pharmacovigilance?	5	CO4	K2, K3	PO3
10	Write a short note on schedule Y.	5	CO5	K2	PO11
11	Write a short note on Clinical phase.	5	CO4	K6	PO10
12	Discuss some Basic terminologies used in pharmacovigilance.	5	CO2	K1, K2	PO1
13	Explain Adverse drug reaction with classification.	5	CO4	K4	PO9

CO- Course Outcomes,	KL- Knowledge Level,	PO – Program Outcome
CO1	Know the importance and attributes of drug safety monitoring.	
CO2	Know the history, development and procedures of pharmacovigilance.	
CO3	Aware about the national and international scenario of pharmacovigilance.	
CO4	Develop the skills of classifying drugs, diseases and adverse drug reactions in students.	
CO5	Know the stock holders and guidelines of pharmacovigilance programmes.	
CO6	Know the dictionaries, coding and terminologies used in pharmacovigilance.	

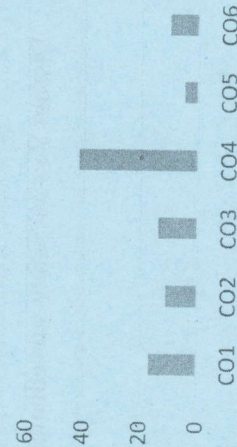
GRAPHICAL REPRESENTATION

Bloom's Level wise Marks Distribution



■ K1 ■ K2 ■ K3 ■ K4 ■ K5 ■ K6

Course Outcome Wise Marks Distribution



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END SEM EXAMINATION
School of Health & Allied Science

Program **Bachelor of Pharmacy**

Subject Name **Pharmacovigilance**

Semester **VIII**

Year **June 2024**

- Start writing from 2nd page onwards; don't Write on the 1st Page Backside
- Answer all Questions of Section A (Compulsory)
- Answer Any Two out of Three of Section B
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Time: 3 Hour
Max. Marks: 75

Knowledge Level (KL)

K1 : Remembering

K2 : Understanding

K3 : Applying

K4 : Analysing

K5 : Evaluating


K6 : Creating

Section A (Each question Carry 01 Mark from Q1- i to xx) – 20 Marks


Q. N	QUESTIONS	Mar ks	COs	KL	PO
1					
i	The aim of Clinical Trail Phase zero is ____. A) Micro dosing Phase B) Safety check C) Therapeutic Confirmation D) Therapeutic Exploration	1	CO4	K3, K4	PO.10
ii	Website of WHO for Pharmacovigilance is: A) Vigimed C) Vigimel B) Viginex D) Viginac	1	CO3	K1, K3	PO.11
iii	The Uppasala Monitoring Center is located in which of the following country? A) China C) Sweden B) Japan D) India	1	CO3	K1, K3	PO.11
iv	Adverse event is due to - A) Life threatening B) Due to drug/ treatment C) May have causal relationship with treatment D) May not have causal relationship with treatment	1	CO4	K2, K3	PO.9
v	The no. of volunteers involved in phase II Clinical trial are - A) <10 C) 100 -300 B) 20-80. D) 1000-3000	1	CO4	K3, K4	PO.9
vi	CIOMS is based in - A) Uppsalla Sweden C) Geneva B) California D) England	1	CO3	K1, K3	PO.11

Phase IV of Clinical Trails is Conducted For _____.	1	CO4	K3, K4	PO9
A) Micro dosing Phase B) Safety check C) Therapeutic Confirmation D) Post marketing Surveillance				
D&C act was passed in - A) 1947. B) 1980. C) 1951. D) 1940.	1	CO1	K1	PO11
Which of the following database is maintained by UMC on behalf of World Health Organization?	1	CO3	K2	PO11
A) EudraVigilance B) Motherisk C) Vigibase D) General Practice Research Database (GPRD)				
ICH stands for -	1	CO4	K3, K4	PO9
A) The International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use B) International council on harmonization C) Internal conference on harmonization D) Indian committee on harmonization				
Phase 02 of Clinical Trails is Conducted For _____.	1	CO2, CO4	K5, K6	PO11
A) Micro dosing Phase B) Safety check C) Therapeutic Confirmation D) Therapeutic Exploration				
ATC Classification stands For		CO4, CO6	K3, K4	PO9
A) Alphabetical, therapeutic and chemical classification of drugs. B) Anatomical, technical and chemical classification of drugs. C) Anatomical, therapeutic and chemical classification of drugs. D) Anatomical, therapeutic and Constitutional classification of drugs.	1			
CROs stands for	1	CO6	K1, K3	PO11
A) Contract research organizations B) Controlled research organizations C) Contract risk organizations D) Controlled risk organizations				
A known limitation of spontaneous ADR reporting is:	1	CO3	K1, K3	PO11
A) Under Reporting B) False Reporting				

xv	C) Excess Reporting D) Spontaneous ADR reporting has no limits A harm that Occurs When a patient is taking a drug, irrespective of whether the drug is suspected to be the cause is also Known as _____. A) Adverse effect B) Adverse event C) Serious adverse effect D) toxic effect	1	CO3	K1, K3	PO11
xvi	CDSCO Ps located in _____. A) New Delhi B) Kolkata C) Hyderabad D) Mumbai	1	CO1, CO4	K1	PO1
xvii	Type E adverse drug reaction is _____. A) A withdrawal reaction B) An unexpected failure of therapy reaction C) A dose-related reaction D) An expected failure of therapy reaction	1	CO3	K2	PO11
xviii	Yellow card in pharmacovigilance was introduced in _____. A) USA B) INDIA C) Europe D) UK	1	CO2	K1	PO1
xix	In Which Year, Floresence Nightingale, made 1st model of systemic collection of hospital data? A) 1860 B) 1862 C) 1894 D) 1893	1	CO2	K1	PO1
xx	In which year WHO Organized a Programme for International Drug Monitoring? A) 1964 B) 1968 C) 1962 D) 1969	1	CO4	K2	PO11
Section B (Answer any Two out of Three) [2 x 10 = 20 Marks] (Each question Carry 10 Marks)					
Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Elaborate safety data generation methods in Pharmacovigilance	10	CO3	K2, K4	PO1
3	Discuss about. ICH Guidelines for Pharmacovigilance.	10	CO4, CO6	K3	PO9
4	Discuss Vaccine Safety surveillance.	10	CO1	K3, K5	PO9



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END SEM EXAMINATION
School of Health & Allied Science

Program Bachelor of Pharmacy

Subject Name Biostatistics and Research Methodology

Semester VIII
Year June 2024

Time: 3 Hour
Max. Marks : 75

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- Answer all Questions of Section A (Compulsory)
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Knowledge Level (KL)
K1 : Remembering K3 : Applying K5 : Evaluating
K2 : Understanding K4 : Analysing K6 : Creating

Section A (Each question Carry 01 Mark from Q1-i to -xx) – 20 Marks

Q. N1	QUESTIONS	Marks	COs	KL	PO
i	If $F(x)$ be a distribution Function then $F(\infty)=?$ (i) 1 (ii) 0 (iii) not defined (iv) none of these	1	CO1	K1	PO2
ii	Sum of square of deviation is minimum when it is taken from (i) Mean (ii) Median (iii) mode (iv) none of these	1	CO2	K5	PO1
iii	Standard deviation is calculated on the basis of? (i) Mean (ii) median (iii) mode (iv) none of these	1	CO1	K1	PO1
iv	if X be the continuous random variable then distribution function so defined is called (i) mass function (ii) density function (iii) exponential function (iv) none of these	1	CO1	K1	PO1

The probability that a bomb dropped from plane will strike the target is $1/5$. If six bombs are dropped then the probability of atleast two will strike the target is (i) 0.345 (ii) $3/5$ (iii) $1/5$ (iv) $1/7$	1	CO1	K1	PO1
Large sample theory is applicable when (i) $N > 100$ (ii) $N > 100$ (iii) $N > 50$ (iv) $N > 30$	1	CO1	K1	PO1

Section B (Answer any Two out of Three) [2 x 10 = 20 Marks]
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO																																				
10.	Calculate the Mean and Standard Deviation of the following data. <table border="1" style="margin: 10px auto;"> <tr> <td>Size</td> <td>5</td> <td>7</td> <td>10</td> <td>3</td> <td>9</td> <td>11</td> <td>12</td> </tr> <tr> <td>Frequency</td> <td>3</td> <td>6</td> <td>9</td> <td>13</td> <td>8</td> <td>5</td> <td>4</td> </tr> </table> <p>In a sample of Opinion answer to the question (i) Do you drink (ii) Are you in favour of local option on sale of liquor depends on individuals drink? Given that the value of chi-square for degree of freedom at 5% level of significant is 3.841.</p> <table border="1" style="margin: 10px auto;"> <tr> <td>Q-1</td> <td>yes</td> <td>No</td> <td>Total</td> </tr> <tr> <td>Q-2</td> <td></td> <td></td> <td></td> </tr> <tr> <td>yes</td> <td>56</td> <td>31</td> <td>87</td> </tr> <tr> <td>No</td> <td>18</td> <td>6</td> <td>24</td> </tr> <tr> <td>Total</td> <td>74</td> <td>37</td> <td>111</td> </tr> </table>	Size	5	7	10	3	9	11	12	Frequency	3	6	9	13	8	5	4	Q-1	yes	No	Total	Q-2				yes	56	31	87	No	18	6	24	Total	74	37	111	10	CO1	K1	PO1
Size	5	7	10	3	9	11	12																																		
Frequency	3	6	9	13	8	5	4																																		
Q-1	yes	No	Total																																						
Q-2																																									
yes	56	31	87																																						
No	18	6	24																																						
Total	74	37	111																																						
	Calculate the coefficient of correlation between birth rate and death rate from the following data: Birth rate: 24 26 32 33 35 30 Death rate: 15 20 22 24 27 24	10	CO1	K3	PO1																																				

v	If E_1 and E_2 be the two events are said to be mutually exclusive events if (i) $E_1 \cap E_2 = \phi$ (ii) $E_1 \cap E_2 = 0$ (iii) $E_1 \cap E_2 = 1$ (iv) none of these	1	CO3	K3	PO1
vi	A random variable X has the following probability function $X = x_i$ -2 -1 0 1 2 3 $P(x)$ 0.1 k 0.2 2k 0.3 k then value of k =? i) 0.1 ii) 0.2 iii) 0.3 iv) none of these	1	CO2	K3	PO9
vii	Relation among the the mean, median and Mode is given by (i) Mode = 3 Median - 2 Mean (ii) Mode = Median - 2 Mean (iii) Mode = 3 Median + 2 Mean iv) Mode = 3 Median - Mean	1	CO1	K2	PO9
viii	If X is a continuous random variable with PDF $f(x)$ the commutative distribution Function $F(x)$ if given by i) $\int_{-\infty}^x f(x) dx$ ii) $\int_{-\infty}^{\infty} f(x) dx$ iii) $\int_{-\infty}^1 f(x) dx$ iv) none of these	1	CO2	K5	PO1
ix	Which of the formula is correct for mean for discrete series (i) $\bar{X} = \frac{\sum X}{N}$ (ii) $\bar{X} = \frac{\sum fX}{N}$ (iii) $\bar{X} = \frac{\sum X}{f}$ (iv) none of these	1	CO2	K5	PO1
x	In which series the formula of $\frac{N}{2}$ is used for Median number? (i) Individual series (ii) Discrete series (iii) continuous series (iv) none of these	1	CO2	K1	PO1
xi	Which of the following formula is used for calculation of mode	1	CO1	K1	PO1

xii	(i) $L1 + \frac{f_1}{f_0 + f_1}$ (ii) $L1 + \frac{f_1 - f_0}{2f_1 - f_0 - f_2}$ (iii) $L1 + \frac{f_1}{f_2 + f_1}$ (iv) none of these A problem in mathematics is given to three students A, B, C whose chances of solving it are $1/2$, $1/3$ and $1/4$ respectively. What is probability that problem will be solved. (i) $\frac{3}{4}$ (ii) $\frac{2}{4}$ (iii) $\frac{5}{8}$ (iv) none of these	1	CO1	K1	PO1
xiii	If $f(x)$ be probability density function then $\int_{-\infty}^{\infty} f(x) dx = ?$ i) 0 ii) 1 iii) ∞ iv) none of these	1	CO2	K1	PO1
xiv	What is the formula of Karl Pearson's correlation of skewness? (i) $\frac{\text{Mean} - \text{Mode}}{SD}$ (ii) $\frac{\text{Mean} + \text{Mode}}{SD}$ (iii) $\frac{\text{Median} - \text{Mode}}{SD}$ (iv) none of these	1	CO1	K3	PO1
xv	The formula of Bowley's coefficient of skewness is (i) $\frac{Q_3 - Q_1 + 2M}{Q_3 + Q_1 - 2M}$ (ii) $\frac{Q_3 - Q_1}{Q_3 - Q_1 + 2M}$ (iii) $\frac{Q_3 + Q_1}{Q_3 + Q_1 + 2M}$ (iv) $\frac{Q_3 - Q_1}{Q_3 + Q_1}$	1	CO1	K1	PO1
xvi	in a positive skew distribution (i) Mean > Median > Mode (ii) Mean > Mode > median (iii) Mode > Mean > Median (iv) none of these	1	CO2	K1	PO1
xvii	The coefficient of skewness in symmetrical distribution is (i) Positive (ii) negative (iii) Zero (iv) none of these	1	CO1	K3	PO1
xviii	The mean of probability distribution of variate X is given by i) $\sum x_i p_i$ ii) $\sum x_i p_i \mu$ iii) $\sum x_i - p_i$ iv) none of these	1	CO1	K1	PO1

Section C (Answer any Seven out of Nine) [7 x 5 = 35 Marks]
(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	CO3	K2	PO9																		
5	<p>A random variable X has the following probability function</p> <table border="1"> <tr> <td>X</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> </tr> <tr> <td>P(x)</td> <td>0</td> <td>k</td> <td>k</td> <td>4k</td> <td>3k</td> <td>K²</td> <td>2K²</td> <td>7K²+k</td> </tr> </table> <p>Find (i) value of k (ii) Evaluate P(X<6) (iii) Evaluate P(X>6) (iv) P (0<X<5).</p>	X	0	1	2	3	4	5	6	7	P(x)	0	k	k	4k	3k	K ²	2K ²	7K ² +k	5	CO2	K1	PO1
X	0	1	2	3	4	5	6	7															
P(x)	0	k	k	4k	3k	K ²	2K ²	7K ² +k															
6	<p>The probability that an entering student will graduate is 0.1. Determine the probability that out of 6 students (i) none (ii) only two (iii) at least two will be graduate.</p>	5	CO1	K1	PO1																		
7	<p>Calculate the Mean Deviation from the Mean and Median from the following data. Also calculate their coefficients.</p> <table border="1"> <tr> <td>Class interval</td> <td>0-5</td> <td>5-10</td> <td>10-20</td> <td>20-30</td> <td>30-40</td> </tr> <tr> <td>Frequency</td> <td>3</td> <td>5</td> <td>6</td> <td>4</td> <td>2</td> </tr> </table>	Class interval	0-5	5-10	10-20	20-30	30-40	Frequency	3	5	6	4	2	5	CO2	K3	PO1						
Class interval	0-5	5-10	10-20	20-30	30-40																		
Frequency	3	5	6	4	2																		
8	<p>The mean height of 500 students is 151cm and the standard deviation is 15 cm. Assuming that the height are normally distributed. Find how many students have height between 120cm to 155cm. given that $P(-2.07 < Z < 0) = 0.4808$. and $P(0 < Z < 0.27) = 0.1064$.</p>	5	CO1	K3	PO9																		
9	<p>Out of 800 families with 5 children each how many would you expect to have (a) 3 boys (b) 5 girls (c) either 2 or 3 girls?</p>	5	CO2	K2	PO9																		
10	<p>The probability that a bomb dropped from plane will strike the target is $\frac{1}{5}$. If six bombs are dropped then the probability of (a) at least two will strike the target (b) exactly two will strike the target.</p>	5	CO1	K1	PO1																		
11	<p>A problem of mechanics is given to three students A B, and C whose chances of solving it is $\frac{1}{2}$, $\frac{1}{3}$ and $\frac{1}{4}$ respectively. What is the probability that problem will be solved</p>	5	CO2	K1	PO1																		
12	<p>A certain screw making machine produces on average 2 defective Screw out of 100 and packs them in boxes of 500. Find the probability that a box contains 15 defective Screws.</p>	5	CO1	K3	PO1																		

13	The probability Mass function of a variate X is							5	CO1	K3	PO9	
	X	0	1	2	3	4	5					6
	P(x)	k	2k	5k	4k	6k	12k					10k

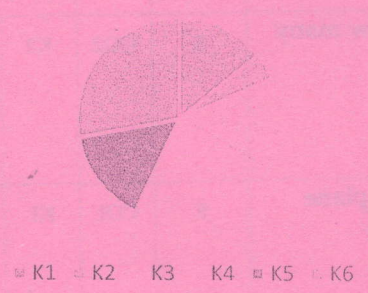
Find $p(x < 4)$, $P(X > 5)$, $P(3 < x < 6)$.

CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

Course Outcomes	CO1	Understand basic needs of Statistics and Biostatistics. Learn concept of Frequency distribution Measures of central tendency, Measures of dispersion and Correlation
	CO2	Learn basics of Regression, Parametric test and probability distribution with examples
	CO3	Learn the basics of Non-Parametric tests with examples. Learn the application of biostatistics for assessing the pharmaceutical experimental data by Curve fitting. Understand the basic need for research; protocol preparation, Experiential Design Technique, plagiarism and representation of data
	CO4	Understand the applications of Biostatics in Pharmacy. Appreciate statistical techniques in solving the problems

GRAFICAL REPRESENTATION

Bloom's Level wise Marks Distribution



Course Outcome Wise Marks Distribution

