



ARKAJAIN
University
Jharkhand

70

END TERM EXAMINATION
School of Health & Allied
Science

Branch	Bachelor of Pharmacy					
Subject Name	Instrumental Method of Analysis					
				Program	B.PHARMACY	
				Semester	7TH	
	Year	2022/ Odd				
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 comes under Unfair Means and will Result in the Cancellation of the Papers. 					
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating			
	K2 : Understanding	K4 : Analysing	K6 : Creating			

Section A

All the Questions are **COMPULSORY**

Short Answer type Question

[1 x 20 = 20Marks]

Q. N	QUESTIONS	Mar ks	COs	KL	PO
Q.1					
i	Column chromatography is based on the principle of a. Ion-exchange b. Exclusion principle c. Adsorption d. Absorption	1	CO2	K2	PO1
ii	Chromatography can be used to a. Form mixtures b. Change mixture compositions c. Separate mixtures into pure substances d. None of above	1	CO2	K2	PO1
iii	The amino acid locating agent is a. Diazo reagent b. Ninhydrin spray. c. Amphoteric oxides d. Neutral oxides	1	CO3	K4, K5	PO2
iv	In descending paper chromatography, which force is responsible for component separation? a. Partition b. Adsorption c. Gravity d. All of the above	1	CO3	K4	PO2
v	In paper chromatography, what kind of filter paper is most commonly used? a. Butter paper b. Sample paper	1	CO2	K4	PO1

vi	c. Whatman filter paper Identification of spots on the TLC plate is done by all of the following EXCEPT a. Spraying with reagents c. Fluorescence	d. Filter paper	1	CO3	K4, K5	PO1
vii	The charged molecules can be separated by a. Column chromatography c. Thin layer chromatography	d. fluorescent adsorbent	1	CO3	K4, K5	PO1
viii	Capillary columns are open tubular columns constructed from which of the following materials a. glass c. stainless steel	b. metal d. fused silica	1	CO2	K2	PO1
ix	In reverse phase chromatography, the stationary phase is made a. Non-polar c. Either non-polar or polar	b. Polar d. None of the above	1	CO2	K2	PO5
x	In electrophoresis, DNA will migrate towards a. Cathode or +ve electrode c. Cathode or -ve electrode	b. Anode or -ve electrode d. Anode or +ve electrode	1	CO2	K4, K5	PO1
xi	What is principal of Turbidimetry? a. Light scattered c. A and B	b. Light transmitted d. None of the above	1	CO1	K2	PO1
xii	Which of the following is group frequency region? a. 4000 - 1500 cm ⁻¹ c. 667 - 50 cm ⁻¹	b. 1500 - 667 cm ⁻¹ d. None of the above	1	CO2	K4, K5	PO1
xiii	_____ is commonly used as mulling agent. a. KCl c. Nujol	b. NaCl d. All of the above	1	CO2	K4, K5	PO1

xiv	Which of the following radiation source consists of silicon carbide rod? a. Nernst glower c. Incandescent lamp	b. Globar source d. Mercury arc lamp	1	CO2	K4, K5	PO1
xv	In flame emission photometers, the measurement of _____ is used for qualitative analysis. a. Colour c. Velocity	b. Intensity d. None of the above	1	CO2	K4, K5	PO1
xvi	Laminar flow burner used in Flame photometers is also known as a. Turbulent burner c. Total consumption burner	b. Premix burner d. Nozzle mix burner	1	CO3	K4, K5	PO1
xvii	Total consumption burner is widely used for a. Combustible flames c. Non explosive flames	b. Explosive flames d. All of the above	1	CO3	K4, K5	PO1
xviii	The elements such as _____ cannot be detected by flame photometer. a. Carbon c. Halides	b. Hydrogen d. All of the above	1	CO3	K4, K5	PO1
xix	Which of the following is not a feature of carrier gas used in gas chromatography? a. It must be chemically inert c. It should not be completely pure	b. It should be suitable for the detector employed d. It should be cheap	1	CO2	K2	PO1
xx	In which of the following methods are liquid samples injected into the column in gas chromatography? a. Gas tight syringe c. Rotary sample valve	b. Micro-syringe d. Solid injection syringes	1	CO2	K2	PO1

Section B
Answer any TWO out of THREE

Q. No.	Q. No.	Q. No.	Q. No.	Q. No.
2				
Give a short note on principle and instrumentation of gel chromatography.				

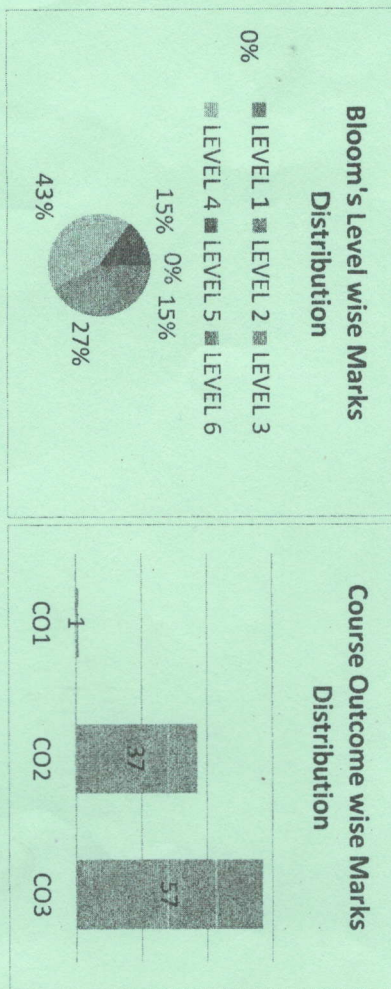
[2 x 10 = 20 Marks]

CO- Course Outcomes,

KL- Knowledge Level,

PO – Program Outcome

Course Outcomes	CO1	Understand the interaction of matter with electromagnetic radiations and its applications in drug analysis.
	CO2	Understand the chromatographic separation and analysis of drugs.
	CO3	Perform quantitative & qualitative analysis of drugs using various analytical instruments.



Note : This above figure is only Example and must prepare this type of figure in these two column

Section C		Answer any SEVEN out of NINE				Q. No.	
QUESTIONS		Mar ks	COs	KL	PO	[7 x 5 = 35Marks]	
3	Write about principle, instrumentation and applications of flame photometry spectroscopy.	10	CO3	K3, K4	PO1		
4	Explain about the principle and instrumentation of fluorimetry.	10	CO3	K3, K4	PO1		
5	Define fluorescence. Write about the factors affecting fluorescence.	05	CO3	K4, K5	PO1		
6	Give a short note on instrumentation of Nepheloturbidometry.	05	CO2	K2, K3, K4	PO1		
7	What is chromatography? Write about its types and explain them with examples.	05	CO2	K2, K3, K4	PO1		
8	Describe the principle of paper chromatography and give a short note on different types of development techniques.	05	CO2	K2, K3, K4	PO1		
9	Write down the basic principle of Gas chromatography. What are the basic property of carrier gas used in GC.	05	CO2	K2, K3, K4	PO1		
10	Define the terms, Normal phase chromatography, symmetry factor, reverse phase chromatography, Gradient HPLC, Rheodyne, guard column.	05	CO3	K4, K5	PO1		
11	Give a short note on theory and instrumentation of affinity chromatography.	05	CO2	K2, K3, K4	PO1		
12	Write about different types of resins used in ion exchange chromatography. Explain about the factors affecting ion exchange.	05	CO3	K4, K5	PO1		
13	Give an account of derivatization technique in GC	05	CO3	K4, K5	PO1		



Branch	Bachelor of Pharmacy			Program	B.PHARMACY
Subject Name	Novel Drug Delivery System			Semester	7TH
				Year	2022/ Odd
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 comes under Unfair Means and will Result in the Cancellation of the Papers. 				
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating		
	K2 : Understanding	K4 : Analysing	K6 : Creating		

Section A

All the Questions are **COMPULSORY**

Short Answer type Question

[1 x 12 = 12 Marks]

Q. N	QUESTIONS	Marks	COs	KL	PO
Q.1					
i	Transdermal drug delivery system is - a) Topically Administered b) Systemically Administered c) Orally Administered d) Both a and b	1	CO3	K1, K2	PO1
ii	The first transdermal patch was - a) Nicoderm b) Nitrodur c) Estraderm d) Transderm Scop	1	CO3	K1	PO1
iii	The component of transdermal device includes- a) Polymer Matrix b) The drug c) Permeation enhancer d) All	1	CO3	K1, K2	PO1
iv	Polymer used for TDDS includes- a) Cellulose derivatives b) Zein c) Polyvinyl alcohol d) All	1	CO1	K1, K3	PO1

xiii	Following is the technique used for coacervation microencapsulation technique a) Change of temperature b) Incompatible polymer addition c) Non solvent addition d) All of the above	1	CO2	K1, K2	PO1
xiv	In microencapsulation, Wurster process is used in a) Coacervation phase separation b) Air suspension c) Multi orifice centrifugal process d) Polymerization	1	CO2	K1, K2	PO1
xv	Coacervation is the type of microencapsulation a) Physical b) Chemical c) Physicochemical d) All of the above	1	CO2	K1	PO1
xvi	Solidifying coating by introducing the coating core material into non-solvent is: a) Spray drying b) Spray congealing c) Both a & b d) None of the above	1	CO2	K1	PO1
xvii	Following is the physical method of microencapsulation technique a) Polymerization b) Solvent evaporation c) Air suspension d) All of the above	1	CO2	K1	PO1
xviii	Pharmaceutical application of microencapsulation technique is a) Prolonged release b) Reduce gastric irritation c) Taste masking d) All of the above	1	CO2	K1	PO1
xix	Water insoluble resin used as coating material for microcapsule is a) Starch b) Polyethylene c) Gelatin d) PVP	1	CO2	K1	PO1
xx	Following is complex coacervation method a) Change in temperature b) Incomplete polymer addition c) Non solvent addition d) Polymer polymer interaction	1	CO2	K1	PO1

v	The drug used for TDDS should have molecular weight less than - a) 1000 daltons b) 2000 daltons c) 2500 daltons d) 3000 daltons	1	CO3	K2, K3	PO1
vi	Outermost layer of skin - a) Stratum corneum b) Stratum Lucidium c) Stratum spinosum d) Stratum granulosum	1	CO3	K2	PO1
vii	The various type of TDDS includes - a) Polymer matrix diffusion controlled b) Drug reservoir gradient controlled c) Polymer membrane permeation controlled d) All of the above	1	CO3	K1, K2	PO1
viii	The fundamental consideration for the formulation of microcapsule include a) Core material b) Coating material c) Vehicle d) All of the above	1	CO2	K1, K2	PO1
ix	Biopharmaceutical factors influence the design of the CRDDS includes- a) Partition coefficient b) Metabolism c) Therapeutic index d) Dosage form index	1	CO1	K1, K2	PO1
x	Pharmacokinetic characteristic of a drug in the design of CRDDS include all except - a) Absorption rate b) Elimination half life c) Rate of metabolism d) Molecular wt of the drug	1	CO1	K1	PO1
xi	The component of polymer matrix diffusion controlled- a) Drug reservoir b) Adhesive rim c) Impermeable backing d) All of these	1	CO2	K1	PO1
xii	The advantage of Microencapsulation is? a) Sustained release of prolonged medication b) Taste masked, chewable tablet powders and suspension c) Single layer tablet for incompatible ingredients d) All of the above	1	CO2	K1	PO1

Section B

Answer any TWO out of THREE [2 x 10 = 20Marks]

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Explain the techniques of Microencapsulation	10	CO2	K2, K4	PO1, PO2
3	Define microencapsulation. Describe the applications of microencapsulation technique.	10	CO2	K1, K2, K4	PO1, PO2
4	Explain polymer matrix diffusion controlled TDDS?	10	CO3	K1, K2, K3	PO1, PO2

Section C

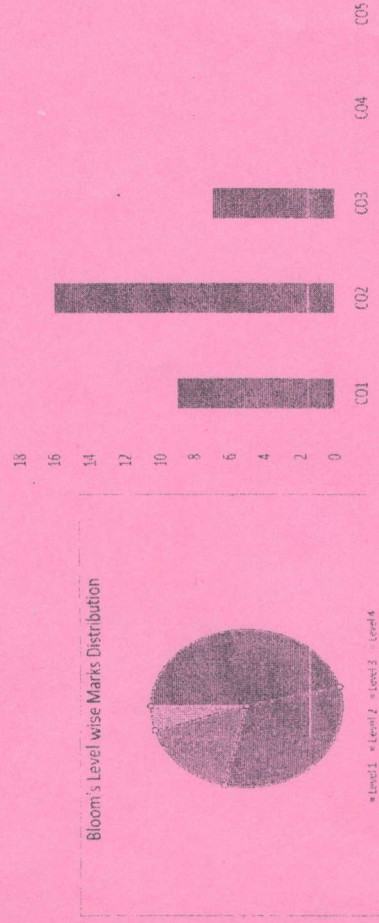
Answer any SEVEN out of NINE [7 x 5 = 35Marks]

Q. No.	QUESTIONS	Marks	COs	KL	PO
5	Define controlled drug delivery system (CDDS)? Write advantages and disadvantages of CDDS.	05	CO1	K1, K2, K3	PO1
6	Define Microencapsulation. List out the advantages and disadvantages of Microencapsulation technique.	05	CO2	K1, K2, K3,	PO1
7	Explain the coacervation phase separation technique of microencapsulation.	05	CO2	K1, K2, K3	PO1
8	Briefly write about the elimination half life of the drug in the design of CRDDS.	05	CO1	K2, K3, K4,	PO1
9	Shortly write about the advantages and disadvantages of TDDS	05	CO3	K1, K2, K3	PO1
10	Briefly write about the physiochemical properties of the drug consider to design TDDS.	05	CO3	K1, K2	PO1
11	Write the concept of controlled drug delivery systems. Explain the approaches for the Controlled release formulations based on diffusion.	05	CO1	K1, K2	PO1, PO2
12	Explain the principle involved in the design of controlled drug delivery systems.	05	CO1	K2, K3	PO1, PO2
13	Write a note on the formulation of buccal drug delivery systems.	05	CO2	K1, K2, K3	PO1, PO2

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

Course Outcome	CO1	CO2	CO3	CO4	CO5
	Understanding the basics of internet and its connections, web browsers	Understanding client-server architecture and use in internet	Able to configure basic LAN and connect computers to it.	Able to combine HTML, CSS, JavaScript for form validation	Understanding the implementation of PHP with database

Course Outcome wise Marks Distribution



Note : This above figure is only Example and must prepare this type of figure in these two column

Branch	Bachelor of Pharmacy		Program	B.PHARMACY
Subject Name	Pharmacy Practice		Semester	7TH
			Year	2022/Odd
Time: 3 Hour	<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 Seven out of Nine of Section B Answer Any of Two out of Three Section C Possession of Mobile Phones or any kind of Written Material, Arguments with the <u>Invigilator</u> or <u>Discussing</u> with Co-Student will come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Papers.</u> 			
Max. Marks : 75				
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating	
	K2 : Understanding	K4 : Analysing	K6 : Creating	

Section A
All the Questions are **COMPULSORY**

Short Answer type Question [1 x 12 = 12 Marks]

Q. N	QUESTIONS	Marks	COs	KL	PO
Q-1					
i	Drip chamber helps for a) Drops Count c) Sterilization NS known as a) Normal saline c) Both A&B	1	CO2	K2	PO1
ii	Theophylline used as a) Bronchodilator c) Anti TB Drug used to treat Diabetes a) Barbiturate c) Metformin	1	CO4 CO1	K4, K5 K4	PO8 PO3
iii	What is role of PTC a) Advisory c) Management	1	CO2	K4	PO2
iv	Primary health care system a) PHC c) CHC	1	CO1, CO5	K2	PO10
vi		1	CO2	K1	PO3

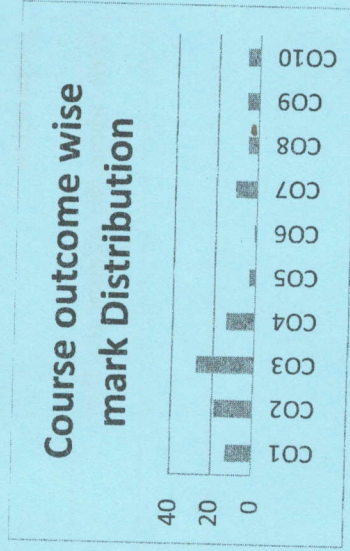
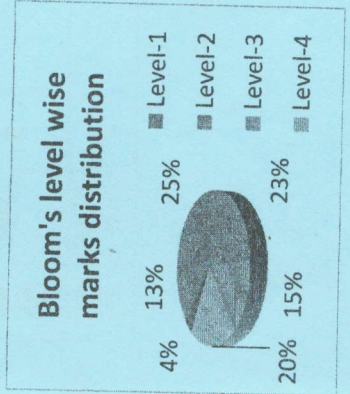
Section C

Answer any TWO out of THREE [2 x 10 = 20 Marks]

Q. No.	QUESTIONS	Marks	COs	KL	PO
11	What is pharmacy Therapeutic committee, write it's function & advantage	10	CO2	K1,K2	PO1
12	What is Inventory , Discuss various techniques for inventory control.	10	CO3	K1,K2, K3,K6,K4	PO4
13	What is ADR , Discuss various types of adverse drug reaction management	10	CO4	K2,K6	PO7

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

Course Outcome	CO1	CO2	CO3	CO4	CO5
	Understanding the basics of internet and its connections, web browsers	Understanding client-server architecture and use in internet	Able to configure basic LAN and connect computers to it.	Able to combine HTML, CSS, JavaScript for form validation	Understanding the implementation of PHP with database



Note : This above figure is only Example and must prepare this type of figure in these two column

vii	Quality management can be controlled by a) Physician b) Pharmacist c) Health worker d) All	1	CO3	K1, K2	PO6
viii	How many numbers of persons are present in PTC a) 1 b) 2 c) 3 d) 4	1	CO1	K1, K2	PO4
ix	Neurology related to study of a) Neuron b) Kidney c) Heart d) Eye	1	CO3	K1	PO7
x	Anesthesia division directed by a) Physician b) Pharmacist c) Nurse d) None of these	1	CO3	K1	PO10
xi	What is the meaning of treatment a) All of these b) Medication c) Nursing d) Diagnostics	1	CO4	K2	PO3
xii	Less administrative power needed for the a) Large hospital b) Small hospital c) Both A&B d) All of these	1	CO4	K2	PO4
xiii	In case of serious cardiovascular disease which unit is necessary a) ICU b) X-RAY c) Urology d) Radiology	1	CO2	K1, K4	PO4
xiv	modernization develop what a) Improve quality b) Decrease quality c) Both A&B d) None of these	1	CO4	K1, K3	PO9
xv	Who is responsible for operating room a) Volunteer b) Patient c) Nursing officer d) None of these	1	CO7	K1	PO10
xvi	Self medication enhance the risk of a) Life risk b) Time management c) Good response d) None of these	1	CO9	K3	PO4
xvii	TDM frequently monitored for a) Antidepressant b) Anticonvulsant c) Antibiotics d) All	1	CO10	K5	PO6

xviii	What is Evaluation Service a) Ratings b) Meetings c) Diagnostics d) All	1	CO5	K5, K1	PO2
xix	Surgical dressing are sterilized by ----- a) Moist heat sterilization b) Drying c) Dry heat sterilization d) Autoclave	1	CO10	K2, K1	PO1
xx	Which Antibiotics is used to treat the Parkinson's disease a) Amantadine b) Aceclofenac c) Diclofenac d) Barbiturates	1	CO5	K2, K1	PO4

Section B

Answer any SEVEN out of NINE

[7 x 5 = 35 Marks]

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Write the various advantages and function of PTC	5	CO1	K2, K4	PO1
3	What is medication Adherence	5	CO1,C O7	K1, K6	PO10
4	Write the advantage of old medication review	5	CO2	K3, K5	PO3
5	What is V.E.D. Analysis	5	CO3	K1, K6	PO5
6	What is OTC	5	CO3,C O7	K1, K2	PO2
7	Write the advantage of preparation of Budget	5	CO3	K3, K6	PO6
8	Briefly explain about Hospital formulary	5	CO7	K1	PO5
9	Discuss the importance of Emergency Drug List preparation	5	CO8,C O10	K6, K2, K3, K4	PO4
10	Write about the Allergic reaction	5	CO9,C O6	K1, K3	PO2

Section B

Answer any TWO out of THREE

[2 x 10 = 20Marks]

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Explain the general considerations for Pilot Plant Scale-up.	10	CO1	K2, K4	PO1
3	Describe the Pilot Plant Scale-up for solid dosage form.	10	CO1	K1, K2, K4	PO1, PO2
4	Explain the Quality Standard ISO 9000	10	CO4	K1, K2, K3	PO2

Section C

Answer any SEVEN out of NINE

[7 x 5 = 35Marks]

Q. No.	QUESTIONS	Marks	COs	KL	PO
5	What do you mean by Pilot Plant Scale-up? Write down the objectives of Pilot Plant Scale-up techniques?	05	CO1	K1, K2, K3	PO1
6	What is the significance of Pilot Plant Scale-up with routine production procedure?	05	CO1	K1, K2, K3, K4	PO1
7	Write a note on personnel requirements in case of Pilot Plant Scale-up?	05	CO1	K1, K2, K3	PO1
8	Write down the quality management principles of ISO 9000	05	CO4	K2, K3, K4	PO1, PO2
9	What is DRA? Write down the vision and mission of Central Drugs Standard Control Organization (CDSCO).	05	CO3	K1, K2, K3	PO1, PO2
10	Write a short note on NABL (National Accreditation Board for Testing and Calibration Laboratories)	05	CO3	K1, K2	PO2
11	Briefly discuss the protocol for good clinical trial.	05	CO5	K1, K2	PO1
12	What is the importance of technology transfer in pharmaceutical industry?	05	CO2	K2, K3	PO1
13	What are the different technology transfer agencies in India? Discuss the objectives and functions of NRDC.	05	CO3	K1, K2, K3	PO2



ARKAJAIN
University
Jharkhand

END TERM EXAMINATION
School of Health & Allied
Science

Branch
Bachelor of Pharmacy

Subject Name
Industrial Pharmacy II

Program
B.PHARMACY

Semester
7TH

Year
2022/Odd

- 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

Section A

All the Questions are COMPULSORY

Short Answer type Question

Q. N 1

[1 x 12 = 12 Marks]

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	Which of the following is not a scale-up process? a) Laboratory to Pilot-scale b) Pilot-scale to industrial scale c) Industrial to Pilot-scale d) Laboratory to industrial scale	1	CO1	K1, K2	PO1
ii	Pilot plant can be used for a) Evaluating results for laboratory results b) Shelf life and stability c) Product and process correction d) All of the above	1	CO1	K1, K2	PO1
iii	Which of the following methods are generally used for liquid filling? a) Gravimetric c) Cons b) Volumetric d) Pore transport	1	CO1	K1, K2	PO1
iv	The following method of a pharmaceutical liquid depend on the following factors a) Viscosity of the liquid b) Surface tension of the liquid c) Compatibility with the material used in the construction of the filling machine d) All of the above	1	CO1	K1, K2	PO1

v	The art of designing of prototype using the data obtained from pilot plant model a) Scaling b) Art work c) Scale-up d) Model design	1	CO1	K2, K3	PO1
vi	CoPP format is recommended by the a) GMP b) FDA c) WHO d) All	1	CO2	K2	PO1
vii	Which of the following is not a part of space requirement in general consideration of pilot plant? a) Physical testing area b) Standard equipment floor space c) Storage area d) Raw material	1	CO1	K1, K2	PO1
viii	Which of the following is a part of pilot plant operation? a) Validation b) Training c) Process and manufacturing activity d) All of the above	1	CO1	K1, K2	PO1
ix	Drug development team connects with? a) Global regulatory affairs b) Scientific affairs c) Chemical development d) All of the above	1	CO3	K1	PO1
x	Full form of HVAC a) Heating, Ventilation and Air Cooling b) Heat, Ventilation and Air Conditioning c) Heating, Ventilation and Air Conditioning d) None of the above	1	CO3	K1	PO1
xi	Which of the following represents India in ISO? a) PFRDA b) FSSAI c) BIS d) BCCI	1	CO5	K1	PO2
xii	Which of the following must not be a characteristic of a quality system a) Products or services actually do satisfy customer expectations. b) Must be well understood c) Emphasis on problem prevention d) Must be ineffective	1	CO4	K1, K2	PO1
xiii	Which of the following is not an advantage of implementing a quality system that conforms to ISO standards? a) Improvement in employee involvement b) Improvement in customer satisfaction	1	CO4	K1, K2	PO1

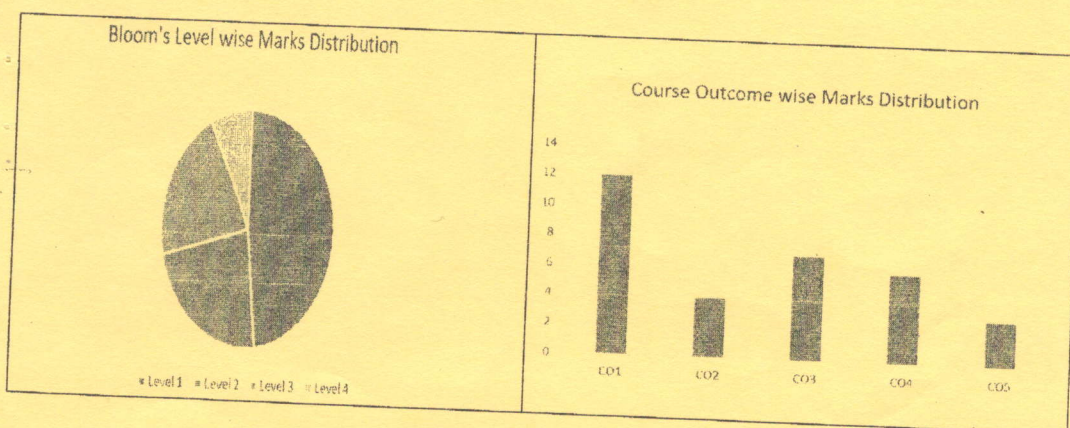
xiv	c) Improvement in housekeeping d) Inefficient decision making Which is the latest ISO 9001 version in the ISO 9000 family? a) ISO 9001: 1994 b) ISO 9001: 2000 c) ISO 9001: 2008 d) ISO 9001: 2015	1	CO4	K1	PO2
xv	Which is the only standard in the ISO 9000 family to which organizations can certify a) ISO 9000 b) ISO 9001 c) ISO 14000 d) ISO 9004	1	CO4	K1	PO1
xvi	Indian Pharmacopoeia Commission headquarter is located at a) Delhi b) Mumbai c) Hyderabad d) Ghaziabad	1	CO3	K1	PO1
xvii	Which of the following is an international regulatory authority for drug regulation? a) CDSCO b) WHO c) UNESCO d) EMA	1	CO5	K1	PO1
xviii	BCS Classification for class III drugs is? a) High solubility high permeability b) Low solubility high permeability c) High solubility low permeability d) Low solubility low permeability	1	CO2	K1	PO1
xix	Which schedule of the D & C Act 1940 and rules 1945 deals with the guidelines for Good Manufacturing Practices? a) . Y b) M c) P d) X	1	CO3	K1	PO1
xx	The entry in the Batch Manufacturing Record is done by a) Quality control Department b) Warehouse department c) Quality assurance Department d) Production Department	1	CO2	K1, K2	PO1

CO- Course Outcomes,

KL- Knowledge Level,

PO – Program Outcome

Course Outcomes	CO1	Understand the interaction of matter with electromagnetic radiations and its applications in drug analysis.
	CO2	Understand the chromatographic separation and analysis of drugs.
	CO3	Perform quantitative & qualitative analysis of drugs using various analytical instruments.



Note : This above figure is only Example and must prepare this type of figure in these two column