Total No. of Printed Pages: 21

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Α

PHD/URS-EE-DEC-2022

SET-Y

SUBJECT: Pharmaceutical Sciences

10037

Sr. No		
Max. Marks : 100	Total Questions: 100	
(in words)		
Date of B	irth	
Mother's Name		
(S	ignature of the Invigilator)	
	(in words) Date of B Mother's Name	

CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

- 1. All questions are compulsory.
- 2. The candidates *must return* the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfairmeans / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
- 3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
- 4. Question Booklet along with answer key of all the A, B, C & D code shall be got uploaded on the University website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the Question Booklet/Answer Key within 24 hours of uploading the same on the University Website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case, will be considered.
- The candidate must not do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers must not be ticked in the question booklet.
- 6. There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
- 7. Use only Black or Blue Ball Point Pen of good quality in the OMR Answer-Sheet.
- 8. Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.

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SEAL

	(1) Phenol > Alcohol > Car	boxylic acid > Alkane	
	(2) Alcohol > Phenol > Car	boxylic acid > Alkane	
	(3) Carboxylic acid > Pheno	ol > Alcohol > Alkane	
	(4) Carboxylic acid > Alcol	hol > Phenol > Alkane	
2.	Out of 24 mols of ATP for "substrate level" by which o		cules of ATP can be formed at
	(1) Citric acid → Isocitric a	icid	
	(2) Isocitrate → Oxaloaceta	ite	
	(3) Succinic acid → Fumara	ate	
	(4) Succinyl CoA → Succir	nic acid	
3.	In the treatment of myast myashenic crisis and choline		nt for distinguishing between sly, is:
	(1) Pyridostigmine	(2) Edrophoniu	ım
	(3) Physostigmine	(4) Neostigmir	ne and a g
4.	A sample of a powder with have bulk volume of 80.33 of the porosity.	true density of 3 g/cm ³ and cm ³ when placed in a 100-m	weighing 100 g was found to l graduated cylinder. Calculate
	(1) 0.58	(2) 0.41	
	(3) 0.31	(4) 0.25	
5.	Which of the following meth	nod is used to obtain surface	tension ?
	(1) X-ray diffraction	(2) Karl Fisch	er method
	(3) Capillary rise method	(4) Sedimental	tion method
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1. Identify the *correct* sequence of acidity:

6.	Kinematic viscosity is the temperature.	absolute viscosity divided by the at specific
	-	(2) Density of liquid
	(1) Weight of liquid	
	(3) Unit time	(4) None of the above
7.	Which of the following is no	ot a primary amine?
	(1) 3-Hexylamine	(2) I-Butylamine
	(3) Diethylamine	(4) Cyclohexylamine
8.		from carbon to electron-deficient oxygen is an example of
	reaction.	
	(1) Baeyer-Villiger rearrang	gements
	(2) Pinacole-Pinacolone rea	arrangements
	(3) Beckmann rearrangeme	
	(4) Benzillic acid rearrange	ement
9.	A mixture of amino acid can	n be separated by:
	(1) Sublimation	(2) Chromatography
	(3) Distillation	(4) None
10.	A meso compound:	
	(1) contains a plane of sym	metry
	(2) is optically inactive	
	(3) is an achiral molecule the	nat contains chirality center
	(4) is characterized by all o	f the above characteristics
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11.	D and L are a pair of configuration.	
	(1) Relative (2) Absolute (3) Cis-trans (4) Optical	
12.	As per Woodward-Hoffman rules for electrocyclic reaction, for a 4n system un thermal condition, rotation direction for bonding is :	der
	(1) Con rotation (2) Dis rotation	
	(3) Both Con and Dis rotations (4) None of the above	
13.	In which of the following structures, geometrical isomer is <i>not</i> possible?	
	(1) Ethene (2) Propene	
	(3) 2-Pentene (4) (1) and (2)	
14.	is the heterocyclic compound with five membered ring.	
	(1) Aziridine (2) Azole (3) Azoletine (4) Azoline	
15.	Chemical nomenclature of procaine is:	
	(1) 2-Dimethylaminoethyl 4-aminobenzoate	
	(2) N, N-Diethyl-4-aminobenzoate	
	(3) 4-Aminobenzamidoethyl amine	
	(4) 4-Amino-2-diethylaminoethyl benzoate	
16.	B-lactamase inhibitor clavunic acid is:	
	(1) 1, 1-dioxo penicillanic acid	
	(2) Carbapenam	
	(3) Cepham	
	(4) 1-oxapenam structure, which has no acyl amino side chain	

17.	Which of the following statement is true	
	(1) Ampicillin is an antipyretic drug.	
	(2) Chloroquine is an antimalarial drug.	
	(3) Amoxicillin is an antiepileptic drug.	
	(4) Paracetamol is an antibiotic.	
	Dose dumping is a problem in the formu	lation of :
18.	Dose dumping is a problem in the royal	
	(1) Compressed tablets	(2) Suppositories
	(3) Soft gel capsule	(4) Controlled release drug products
19.	No drug, regardless of its shelf life, can	be sold after:
	(1) 2 years	(2) 3 years
	(3) 5 years	(4) 7 years
20.	An unequal distribution of colour on the	surface of the tablet is called:
	(1) Cracking	(2) Chipping
	(3) Picking	(4) Mottling
21.	Surfactant <i>not</i> used parentally is:	
	(1) PEG	(2) Tween
	(3) Povidone	(4) Cetyl trimethyl ammonium bromide
22.	Aseptic area is:	
	(1) Class 100 area	(2) Class 10 area
	(3) Class 1000 area	(4) Class 10000 area
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		/- ()

23. pA can be defined as:

- negative log of molar concentration of an antagonist which produces half of the maximum response.
- (2) negative log of molar concentration of an agonist which produces half of the maximum response.
- (3) negative log of molar concentration of an antagonist in the presence of which double dose of agonist required to produce same effect as produced in absence of antagonist.
- (4) negative log of molar concentration of an antagonist in the presence of which half dose of agonist required to produce same effect as produced in absence of antagonist.

24. N	lost	common	phase	Π	reaction	is	:
-------	-------------	--------	-------	-------	----------	----	---

- (1) Sulphate conjugation
- (2) Glucronide conjugation

(3) Hydroxylation

(4) Methylation

25. Which of the following statements are true?

- [P] Substance P is located at sympathetic ganglia.
- [Q] Neuropeptide Y is located at postganglionic sym- pathetic neurons.
- [R] Nitric oxide located at enteric neurons.
- [S] Gonadotrophin-releasing hormone is not located at sympathetic ganglia.
- (1) P and Q

(2) P and R

(3) Q and R

(4) R and S

26. Pilocarpine is classified as:

- (1) Cholinestrase inhibitor
- (2) Sympathomimetic

(3) Cholinomimetic

(4) Cholinolytics

27.	Following statements are <i>true</i> except: (1) Prolactin is a milk-synthesizing horizon (2) Oxytocin is a milk-ejecting hormon (3) ACTH inhibits steroidogenesis in (4) Growth hormone secretion decreases	ne. adrenal cortex.
28.	Which of the following facilitates the a (1) Chlorpromazine (3) Diazepam	(2) Ethanol (4) Imipramine
29.	Nitric oxide is contraindicated in patie (1) Myasthemia gravis (3) Cerebral degeneration	nts with: (2) Polycethymia vera (4) All of these
30.	Antimalarial activity of chloroquine is (1) Inhibition of protein synthesis in p (2) Inhibit heme polymerase enzyme (3) Paralyses the plasmodia (4) None of the above	
31.	Which of the following drug inhibits the (1) Zioduvadine (2) Lopinavir	
32.	Captopril exerts action by : (1) Inhibiting the rennin release	
	(2) Inhibiting conversion of angiotens(3) Inhibiting conversion of angiotens(4) Inhibiting conversion of angiotens	in II to I
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- **33.** HMG-CoA reductase, a key enzyme in the pathway catalyses :
 - (1) Side chain cleavage in the conversion of cholesterol to steroid hormones.
 - (2) The reduction of the thio-ester group to an alcohol in mevalonate biosynthesis.
 - (3) The reduction of the hydroxyl group of mevalonate to vitamin D.
 - (4) Steroid condensation reaction in the biosynthesis of bile acids.
- 34. Centroxylic stands for:
 - (1) Phloem in the centre surrounded by xylem
 - (2) Xylem in the centre surrounded by phloem
 - (3) Phloem in the centre surrounded by cambium
 - (4) Xylem in the centre surrounded by cambium
- **35.** In which ayurvedic formulation preservative is *not* required?
 - (1) Lepa
- (2) Vatika
- (3) Asava
- (4) Pisti

36. Match the following:

	Basic nucleus	Herbal drug
a.	Tropne	i. Emetine
b.	Quinoline	ii. Pilocarpine
c.	Isoquinoline	iii. Cocaine
d.	Imidazole	iv. Quinine
e.	Purine	v. Caffiene

- (1) a-iii, b-iv, c-ii, d-i, e-v
- (2) a-iii, b-iv, c-i, d-ii, e-v
- (3) a-iii, b-i, c-iv, d-ii, e-v
- (4) a-iv, b-iii, c-i, d-ii, e-v

	Anthraquinone glycosides of cascara	contain:
37.		(2) N-glycosides
	(1) O-glycosides	(4) S-glycosides
	(3) C-glycosides	
20	Tannins do not respond to:	
38.	(1) Goldbeater's skin test	(2) Phenazone test
		(4) Borntrager's test
	(3) Match-stick test	
39.	Stains useful for identifying fungus ir	clude the following, except:
	(1) Gram stain	(2) Haernatoxylin and eosin
	(3) Gomorimethanamine silver	(4) PAS (Periodic Acid-Schiff)
		and the state of t
40.	The following contain live-attenuated	live vaccines, except:
	(1) Polio	(2) Hepatitis A
	(3) Yellow fever	(4) Measles
41.	Coomb's test is for:	
41.		(2) (2) 1 1111
	(1) Typhoid	(2) Syphillis
	(3) Yellow fever	(4) Antiglobulin
42.	Fragile heat sensitive equipments are	sterilised by which method ?
	(1) Gamma radiation	
	(3) Chemical sterlisation	(2) Ethylene oxide
	() sternsation	(4) None
43.	License for bonded and non-bonded l	aboratory is issued by :
	(1) Drug Inspector	(2) Excise Commissioner
	(3) Director of health services	(4) State Government
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		/

	(1) 2005 (2) 2014	(3) 2013	(4) 2015
45	5. Under DPCO-2013, how a ceiling	ng price is calculated:	
	 Based on the simple aver medicines having a market Turnover (MAT). 		prices of different brands of , based on the Moving Annual
	(2) Based on the simple average having a market share of Turnover (MAT).	-	of leading brands of medicines used on the Moving Annual
	(3) Based on the simple aver medicines having a market Turnover (MAT).		based on the Moving Annual
	(4) Based on the simple aver medicines having a market s Turnover (MAT).		prices of different brands of t, based on the Moving Annual
46.	Fluid energy mill works on princ	iple of :	
	(1) impact	(2) compression	n
	(3) impact and attrition	(4) rotor and st	ator
47.	Which equipment is used for mix	ing immiscible liquids	Programme and the
	(1) Airjet mixer	(2) Jet mixer	
	(3) Silverson mixer	(4) Sigma mixe	er .
48.	The mechanism of intake of DNA called:		
	(1) Transformation	(2) Transduction	on
	(3) Conjugation	(4) Both (1) an	d (2)
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44. Drugs and Cosmetics Act has been latest amended in the year:

- 49. Which of the following techniques is generally used to produce transgenic animals?
 - (1) Processed RNA containing only exons are introduced into the embryo
 - (2) Entire foreign nucleus is introduced into the blastocyst stage enucleated embryo
 - (3) Desired DNA is microinjected into fertilised eggs followed by the implantation of the embryo in a foster mother
- (4) c-DNA of the desired gene is introduced into animal embryos and implanted in the
- 50. What is meant by 'Organ culture'?
 - (1) Maintenance alive of a whole organ, after removal from the organism by partial immersion in a nutrient fluid
- (2) Introduction of a new organ in an animal body with a view to create genetic mutation in the progenies of that animal
 - (3) Cultivation of organs in a laboratory through the synthesis of tissues
 - (4) The aspects of culture in community which are mainly dedicated by the need of a specified organ of the human body
- **51.** Protoplasts can be produced from suspension cultures, callus tissues or intact tissues by enzymatic treatment with:
 - (1) cellulotyic enzymes
 - (2) pectolytic enzyme
 - (3) proteolytic enzyme
 - (4) both (1) and (2) the (1) does (1)

52. Match the phytoconstituent with the biosynthetic pathway by which it is biosynthesised:

Column-I	Column-II
(i) Fatty acids	(a) Acetate Mevalonate Pathway
(ii) Steroids	(b) Acetate Malonate Pathway
(iii) Flavonoids	(c) Photosynthesis
(iv) Sugars	(d) Shikimic Acid Pathway

(1)	1-a;	11-b;	iii-c;	1V-d

(2) i-d: ii-a; iii-b; iv-c

		1	1	
(3)	1-a;	11-d;	iii-b;	1V-C

(4) i-b; ii-a; iii-d; iv-c

53.	Which of the following methods is not	used	for	extracting	volatile	oils	from	aromatic
	plants ?							

(1) Hydro-distillation

(2) Ecuelle

(3) Enfleurage

(4) Hot continuous Percolation

- 54. Which of the following is *not* used to determine the identity of crude drugs?
 - (1) Microscopic evaluation

(2) Phytochemical evaluation

(3) Acute toxicity evaluation

(4) Evaluation of physical parameters

55. Which of the followings belongs to tyrosine kinase family of receptors?

(1) GABAA receptors

(2) Adrenergic receptors

(3) Insulin receptors

(4) Dopamine receptors

56. Nicotinic Receptors are blocked by:

(1) Atropine

(2) Curare

(3) Suxmethonium

(4) Acetylcholine esterase

	the tie memory greatern leads to:
57.	Stimulation of the parasympathetic nervous system leads to:
	(1) Constriction of pupils
	(2) Constriction of skin vessels
	(3) Constriction of gastrointestinal sphincters
	(4) Constriction of brain vessels
58.	Which of the following are paired bones found in the cranium:
	(1) Frontal and Parietal (2) Parietal and Maxillary
	(3) Frontal and Occipital (4) Parietal and Temporal
59.	Indicate which of the following statements is <i>true</i> . Oil-soluble surfactants:
	(1) Have high HLB values.
	(2) Are hydrophilic.
	(3) Can be used as emulsifiers to produce water-in-oil emulsions.
	(4) Are efficient solubilising agents.
60.	Which statement is <i>correct</i> ?
	(1) Mainly acidic drug binds to albumin.
	(2) Mainly basic drug binds to albumin.
	(3) Acidic drug binds only to a-acid glycoprotein.
	(4) None of the above
61.	Drug X has a molecular weight of 750 daltons. From which of the following route will it get excreted?
	(1) Biliary excretion (2) Urinary excretion
	(3) Both (1) and (2) (4) Cannot say
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- **62.** Drug disposition includes :
 - (1) Drug absorption and distribution
 - (2) Drug absorption and metabolism
 - (3) Drug distribution, metabolism and excretion
 - (4) Drug metabolism and excretion
- 63. Pyrogens present in containers can be destroyed by heating the containers at:
 - (1) 121°C for 15 mins

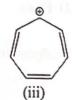
(2) 121°C for 30 mins

(3) 210°C for 4 h

- (4) 210°C for 1 h
- 64. Which of the following structure would be an aromatic?









(1) i and iv

(2) i, iii and iv

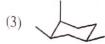
(3) iii and iv

- (4) only ii
- 65. The most stable conformation of the following compound is:









(4)

. 7		
66.	. Following pairs represent antibiotic and its so	ource. Identify the correct pair:
00.	(1) Griseofulvin : Bacteria (2)	Polyenes: Fungi
	(3) Colistin : Fungi (4)	Macrolides : Actinomycetes
67.		
	(1) Acute oral toxicity by acute toxic class me	ethod
	(2) Acute oral toxicity by up and down proce	dure
	(3) Repeated dose 28-day toxicity study in ro	dents
	(4) Acute oral toxicity by fixed dose procedur	
68.	3. The labelling instruction "To be diluted 20 ti dispensed product is a:	mes its volume with water indicates the
		Linctus (4) Mixture
69.	9. The compound 2 - (Diethylamino) ethyl [bio	cyclohex-yl]-l-carboxylate hydrochloride
	is:	
	(1) Dicycloverine	
	(2) Diphenhydramine	
	(3) Both nicotinic and specific antispasmodic	
	(4) Diagonistic agent for diagnosis of thyroid	gland
70.	Which of the following statements about Mich.	naelis-Menten kinetics is correct?
	(1) Km the Michaelis constant, is a measure substrate.	re of the affinity the enzyme as for its
	(2) Km the Michaelis constant, is defined as t the reaction to reach maximum velocity.	the concentration of substrate required for
	(3) Km the Michaelis constant, is defined as enzyme	the dissociation of the substrate from the
	J	

(4) None of the above

71.	The normal concentration of serum bilirubin is:
	(1) 0.2-1 mg/dl (2) 0.2-0.4 mg/dl
	(3) 1-2 mg/dl (4) 2-3 mg/dl
72.	As quickly dividing cells continue to undergo change (genetic mutation), they may begin to look abnormal and disorganized. This stage of a transforming cell is known as:
	(1) Hyperextension (2) Morphology
	(3) Hyperplasia (4) Dysplasia
73.	Which of the following responsibility of the clinical pharmacist is in direct patient care area?
	(1) Supervision of drug administration techniques
	(2) Providing drug information to the physician and nurses
	(3) Identify drugs brought into the hospital by patients
	(4) Reviewing of each patients drug administration forms periodically to ensure all doses have been administered
74.	Which of the following statements best describe a lead compound?
	(1) A compound that contains the element lead (Pb).
	(2) A compound from the research laboratory which is chosen to go forward for
	(3) A molecule that shows some activity of interest and serves as the starting point for
	development of drug
	(4) The first compound of the structural class of compounds to reach the market. P. T. O.

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75.	What is the area designed for the preparation of sterile products called ?		
70.	(1) Clean room (2) Formulary		
	(3) In-patient pharmacy (4) None of the above		
76.	The Second Law of Thermodynamics stated that: (1) It is impossible to take heat from a hotter reservoir and convert it completely into work by a cyclic process without transferring a part of heat to a cooler reservoir		
	(2) It is impossible to transfer heat from a body at a lower temperature to one at higher temperature		
	(3) The efficiency of heat engine is always less than 1		
	(4) All of the above		
77.	The molarities of $0.1NHCl$ and $0.1NH_2SO_4$ is respectively :		
	(1) $0.1 \text{M} HCl \text{ and } 0.05 \text{M} H_2 SO_4$		
	(2) $0.05M\ HCl\ and\ 0.1M\ H_2SO_4$		
	(3) 1M HCl and 0.2M H_2SO_4		
	(4) $0.05M\ HCl\ and\ 0.1M\ H_2SO_4$		
78.	Which of the following includes all the aims of kinetics ?		
	i. To measure the rate of reaction		
	ii. To be able to predict the rate of reaction		
	iii. To be able to establish the mechanism by which reaction occurs		
iv. To be able to control the reaction			
	(1) i, ii and iii (2) i and ii		
	(3) i and iii (4) i, ii, iii and iv		
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(2) 0.01 - 0.001 g

(4) < 0.0001 g

(1) 0.1 - 0.01 g

(3) 0.001 - 0.0001 g

		increased by minimization of:
84.	 Precision of an analytical exp 	periment can be increased by minimization of:
	(1) Personal errors	(2) Instrumental errors
	(3) Indeterminate errors	(4) Determinate errors
85.	Mohr's method is carried out	
	(1) 6-9	(2) 8-10
	(3) 4-7	(4) 3-6
86.	Process of conversion of agg called:	regated precipitates into colloidal form during washing is
	(1) Coagulation	(2) Peptisation
	(3) Colloid formation	(4) None of these
87.	Calomel is a mixture of:	
	(1) Hg_2Cl_2 and KCl	(2) Hg_2Cl_2 , Hg and KCl
	(3) $HgCl_2$ and KCl	(4) $HgCl_2$, Hg and KCl
88.	The base value for a homoann	ular diene is :
	(1) 215 nm	(2) 235 nm
	(3) 253 nm	(4) 207 nm
89.	The $n \to \pi^*$ transition undergo	bes shift in a polar solvent.
	(1) Hypsochromic	(2) Hyperchromic
	(3) Bathochromic	(4) None
90.	Which of the following nucleus	s is <i>not</i> detected in NMR spectroscopy?
	$(1)^{-1}H$ $(2)^{-12}C$	(3) ^{15}N (4) ^{19}F
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		2.
	sate following combinations	19
g1.	which of the following combinations of not comply with the Nitrogen rule?	f molecular formula and molecular mass does
	(1) $C_2H_7N = 43$	(2) $C_5 H_5 N = 79$
	$ (1) C_2 H_7 $ $ (3) C_5 H_6 N_2 = 95 $	(4) $C_7 H_6 O_2 = 122$
92.	The most efficient method for analysis of	f suspensions is:
	(1) Turbidimetry	(2) Infrared spectroscopy
	(3) UV-VIS spectroscopy	(4) NMR spectroscopy
93.	Which of the following is used spectrophotometer?	as light source in atomic absorption
	(1) Tungsten Filament lamp	(2) Xenon Arc lamp
	(3) Globar source	(4) Hollow cathod lamp
94.	Which of the following is a basic amino	acid?
	(1) Alanine	(2) Arginine
	(3) Leucine	(4) Tyrosine
95.	Synthesis of glucose from fat is called a	s:
	(1) Glycolysis	(2) Gluconeogenesis
	(3) Glucosapogenesis	(4) Ketogenesis
96.	Which statement best describes the oxid	lation of odd chain fatty acids?
	(1) Additional specific enzymes are nee	eded for the oxidative process.
	(2) One carbon is removed in one cycle	
	(3) End product is propionyl Co-enzym	ne A.

(4) Hydroxy fatty acid are produced.

97.	. Which of the following vitamins do not	participate in TCA cycle?
37.	(1) Pentothenic acid (3) Folic acid	(2) Lipoic acid(4) Riboflavin
98.	A nucleoside is composed of: (1) Base + Sugar (3) Base + Phosphate	(2) Base + Sugar + Phosphate(4) None of these
99.	The <i>correct</i> expansion of acronym HET (1) Highest Equivalent Theoretical Plate (2) Height Equivalent to Theoretical Plate (3) Highest Entropic Theoretical Plate (4) Hollow Equilibrated Theoretical Plate	ate
100.	Which of the following instrumental resolution of analyte?	parameters do not affect chromatographic
	 Particle size of stationary phase Flow rate of mobile phase Length of stationary phase 	
	(4) None of these	

Cr No

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SET-Y

SUBJECT: Pharmaceutical Sciences

10038

		31. No.
Time: 11/4 Hours	Max. Marks : 100	Total Questions: 100
Roll No. (in figures)	(in words)	
Name	Date of	of Birth
Father's Name	Mother's Name	
Date of Examination		
	·	
(Signature of the Candidate)		(Signature of the Invigilator)

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- 4. Question Booklet along with answer key of all the A, B, C & D code shall be got uploaded on the University website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the Question Booklet/Answer Key within 24 hours of uploading the same on the University Website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case, will be considered.
- 5. The candidate *must not* do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers *must not* be ticked in the question booklet.
- 6. There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
- 7. Use only Black or Blue Ball Point Pen of good quality in the OMR Answer-Sheet.
- 8. Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.

PHD/URS-EE-2022/(Pharmaceutical Sciences)(SET-Y)/(B)

SEAL

1.	1. Coomb's test is for:		
	(1) Typhoid (2) Syp	hillis	
	(3) Yellow fever (4) Ant	iglobulin	
2.	2. Fragile heat sensitive equipments are sterilised by	which method ?	
	(1) Gamma radiation (2) Eth	ylene oxide	
	(3) Chemical sterlisation (4) Nor	ne	
3.	3. License for bonded and non-bonded laboratory is	issued by:	
	(1) Drug Inspector (2) Exc	ise Commissioner	
	(3) Director of health services (4) State	te Government	
4.	d in the year:		
	(1) 2005 (2) 2014 (3) 201	3 (4) 2015	
5.	5. Under DPCO-2013, how a ceiling price is calcula	ated:	
	(1) Based on the simple averaging of the market prices of different brands of medicines having a market share of 1% and above, based on the Moving Annual Turnover (MAT).		
	(2) Based on the simple averaging of the market having a market share of 1.5% and ab Turnover (MAT).		
	(3) Based on the simple averaging of the medicines having a market share of 2% and Turnover (MAT).		
	(4) Based on the simple averaging of the medicines having a market share of 2.5% and Turnover (MAT).		
PHD	ID/URS-EE-2022/(Pharmaceutical Sciences)(SET-	Y)/(B) P. T. O.	

6	Fluid energy mill works on	principle of :
	(1) impact	(2) compression
	(3) impact and attrition	(4) rotor and stator
7	Which equipment is used for	r mixing immiscible liquids ?
	(1) Airjet mixer	(2) Jet mixer
	(3) Silverson mixer	(4) Sigma mixer
8	The mechanism of intake of called:	DNA fragments from the surrounding medium by a cell is
	(1) Transformation	(2) Transduction
	(3) Conjugation	(4) Both (1) and (2)
9.	Which of the following techn	niques is generally used to produce transgenic animals?
	(1) Processed RNA containi	ng only exons are introduced into the embryo
	(2) Entire foreign nucleus is	introduced into the blastocyst stage enucleated embryo
	(3) Desired DNA is microing the embryo in a foster me	jected into fertilised eggs followed by the implantation of other
	(4) c-DNA of the desired general foster mother	ne is introduced into animal embryos and implanted in the
10	What is meant by 'Organ cult	ure' 2 for \$77 L to Suns Dates to the suns of the suns
10.	, ,	are:
	immersion in a nutrient fl	whole organ, after removal from the organism by partial uid
	(2) Introduction of a new of mutation in the progenies	rgan in an animal body with a view to create genetic of that animal
	(3) Cultivation of organs in a	laboratory through the synthesis of tissues
	(4) The aspects of culture in specified organ of the hun	community which are mainly dedicated by the need of a nan body

(1) 0.2-1 mg/dl

	(3) 1-2 mg/dl (4) 2-3 mg/dl
12.	As quickly dividing cells continue to undergo change (genetic mutation), they may begin to look abnormal and disorganized. This stage of a transforming cell is known as:
	(1) Hyperextension (2) Morphology
	(3) Hyperplasia (4) Dysplasia
13.	Which of the following responsibility of the clinical pharmacist is in direct patient care area?
	(1) Supervision of drug administration techniques
	(2) Providing drug information to the physician and nurses
	(3) Identify drugs brought into the hospital by patients
	(4) Reviewing of each patients drug administration forms periodically to ensure all doses have been administered
14.	Which of the following statements best describe a lead compound?
	(1) A compound that contains the element lead (Pb).
	(2) A compound from the research laboratory which is chosen to go forward for pre-clinical and clinical trials.
	(3) A molecule that shows some activity of interest and serves as the starting point for development of drug.
	(4) The first compound of the structural class of compounds to reach the market.
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11. The normal concentration of serum bilirubin is:

(2) 0.2-0.4 mg/dl

15.	What is the area designed for the preparation of sterile products called ?
	(1) Clean room (2) Formulary
	(3) In-patient pharmacy (4) None of the above
16.	The Second Law of Thermodynamics stated that:
	(1) It is impossible to take heat from a hotter reservoir and convert it completely into work by a cyclic process without transferring a part of heat to a cooler reservoir
	(2) It is impossible to transfer heat from a body at a lower temperature to one at higher temperature
	(3) The efficiency of heat engine is always less than 1
	(4) All of the above
17.	The molarities of $0.1NHCl$ and $0.1NH_2SO_4$ is respectively:
	(1) 0.1M <i>HCl</i> and 0.05M <i>H</i> ₂ <i>SO</i> ₄
	(2) $0.05M\ HCl\ and\ 0.1M\ H_2SO_4$
	(3) 1M HCl and 0.2M H_2SO_4
	(4) $0.05M\ HCl\ and\ 0.1M\ H_2SO_4$
18.	Which of the following includes all the aims of kinetics?
	i. To measure the rate of reaction
	ii. To be able to predict the rate of reaction
	iii. To be able to establish the mechanism by which reaction occurs
	iv. To be able to control the reaction
	(1) i, ii and iii (2) i and ii
	(3) i and iii (4) i, ii, iii and iv

19.	The boiling point of pure water is 100°C of pure water, the boiling point will be:	C, upon the addition of 10g of NaCl in 100 ml
	(1) 100°C	(2) 92°C
	(3) 107°C	(4) No change
20.	There are several advantages of solid Which of the following statements is no	phase synthesis over conventional synthesis.
	(1) Excess reagents can be used to force	the equilibrium of a reaction to product
	(2) Impurities and by products are easily	y removed
	(3) Intermediates do not need to be isola	ated and purified
	(4) Structures can be strongly linked t removed	o the solid support such that they can not be
21.	Which of the following combinations of not comply with the Nitrogen rule?	of molecular formula and molecular mass does
	(1) $C_2H_7N = 43$	(2) $C_5H_5N = 79$
	(3) $C_5H_6N_2 = 95$	(4) $C_7 H_6 O_2 = 122$
22.	The most efficient method for analysis of	of suspensions is :
	(1) Turbidimetry	(2) Infrared spectroscopy
	(3) UV-VIS spectroscopy	(4) NMR spectroscopy
23.	spectrophotometer?	l as light source in atomic absorption
	(1) Tungsten Filament lamp	(2) Xenon Arc lamp
	(3) Globar source	(4) Hollow cathod lamp

	Which of the following is a basic amino	acid	?
24.		(2)	Arginine
	(1) Alanine	(4)	Tyrosine
	(3) Leucine	,	
0.5	Synthesis of glucose from fat is called as	3:	
25.		(2)	Gluconeogenesis
	(1) Glycolysis	(4)	Ketogenesis
	(3) Glucosapogenesis		
26.	Which statement best describes the oxid	ation	of odd chain fatty acids?
20.	(1) Additional specific enzymes are nee	ded 1	for the oxidative process.
	(2) One carbon is removed in one cycle		
	(3) End product is propionyl Co-enzyme		
	(4) Hydroxy fatty acid are produced.		
27.	Which of the following vitamins do not	parti	cipate in TCA cycle?
	(1) Pentothenic acid	(2)	Lipoic acid
	(3) Folic acid	(4)	Riboflavin
28.	A nucleoside is composed of:		
	(1) Base + Sugar	(2)	Base + Sugar + Phosphate
	(3) Base + Phosphate	(4)	None of these
29.	The <i>correct</i> expansion of acronym HET	Pis	:
	(1) Highest Equivalent Theoretical Plat	e	
	(2) Height Equivalent to Theoretical Pl	ate	
	(3) Highest Entropic Theoretical Plate		
	(4) Hollow Equilibrated Theoretical Pla	ate	
	5.		

- **30.** Which of the following instrumental parameters do **not** affect chromatographic resolution of analyte?
 - (1) Particle size of stationary phase
 - (2) Flow rate of mobile phase
 - (3) Length of stationary phase .
 - (4) None of these
- 31. Identify the correct sequence of acidity:
 - (1) Phenol > Alcohol > Carboxylic acid > Alkane
 - (2) Alcohol > Phenol > Carboxylic acid > Alkane
 - (3) Carboxylic acid > Phenol > Alcohol > Alkane
 - (4) Carboxylic acid > Alcohol > Phenol > Alkane
- **32.** Out of 24 mols of ATP formed in TCA cycle, 2 molecules of ATP can be formed at "substrate level" by which of the following reaction?
 - (1) Citric acid → Isocitric acid
 - (2) Isocitrate → Oxaloacetate
 - (3) Succinic acid → Fumarate
 - (4) Succinyl CoA → Succinic acid
- **33.** In the treatment of myasthenia gravis, the best agent for distinguishing between myashenic crisis and cholinergic crisis, given intravenously, is:
 - (1) Pyridostigmine
 - (2) Edrophonium
 - (3) Physostigmine
 - (4) Neostigmine

34.	A sample of a powder with true density have bulk volume of 80.33 cm ³ when potential the porosity.	y of 3 g/cm ³ and weighing 100 g was found to laced in a 100-ml graduated cylinder. Calculate
	(1) 0.58	(2) 0.41
	(3) 0.31	(4) 0.25
35.	Which of the following method is used t	o obtain surface tension?
	(1) X-ray diffraction	(2) Karl Fischer method
	(3) Capillary rise method	(4) Sedimentation method
36.	Kinematic viscosity is the absolute vitemperature.	iscosity divided by the at specific
	(1) Weight of liquid	(2) Density of liquid
	(3) Unit time	(4) None of the above
37.	Which of the following is <i>not</i> a primary	amine?
	(1) 3-Hexylamine	(2) I-Butylamine
	(3) Diethylamine	(4) Cyclohexylamine
38.	The migration of a group from carbon reaction.	to electron-deficient oxygen is an example of
	(1) Baeyer-Villiger rearrangements	
	(2) Pinacole-Pinacolone rearrangements	
	(3) Beckmann rearrangement	
	(4) Benzillic acid rearrangement	
PHD/U	RS-EE-2022/(Pharmaceutical Sciences)(SET-Y)/(B)

11						
d by:						
(2) Chromatography						
(4) None						
40. A meso compound :						
chirality center						
characteristics						
nsion cultures, callus tissues or intact tissue						
(2) pectolytic enzyme						
(4) both (1) and (2)						
he biosynthetic pathway by which i						
el a Censa ser en ai pupils II-n						
Mevalonate Pathway						
Malonate Pathway						
vnthesis ()						
c Acid Pathway						

(2) i-d: ii-a; iii-b; iv-c

(4) i-b; ii-a; iii-d; iv-c

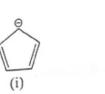
(1) i-a; ii-b; iii-c; iv-d

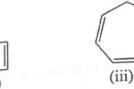
(3) i-a; ii-d; iii-b; iv-c

		for extracting volatile oils from aromatic
43		ot used for extracting volatile oils from aromatic
	plants ?	(2) Ecuelle
	(1) Hydro-distillation	(4) Hot continuous Percolation
	(3) Enfleurage	(4) Hot comme
44	. Which of the following is <i>not</i> used to	determine the identity of crude drugs?
	(1) Microscopic evaluation	(2) Phytochemical evaluation
	(3) Acute toxicity evaluation	(4) Evaluation of physical parameters
45.	. Which of the followings belongs to tyr	rosine kinase family of receptors ?
	(1) GABAA receptors	(2) Adrenergic receptors
	(3) Insulin receptors	(4) Dopamine receptors
40	N' at ' ' December on blocked by	
46.	S. percelytte earyene	(1) calculative entrance
	(1) Atropine	(2) Curare
	(3) Suxmethonium	(4) Acetylcholine esterase
47.	Stimulation of the parasympathetic ner	vous system leads to :
	(1) Constriction of pupils	
	(2) Constriction of skin vessels	
	(3) Constriction of gastrointestinal sph	incters
	(4) Constriction of brain vessels	
48.	Which of the following are paired bone	es found in the cranium:
	(1) Frontal and Parietal	(2) Parietal and Maxillary
	(3) Frontal and Occipital	(4) Parietal and Temporal
PHD/U	RS-EE-2022/(Pharmaceutical Science	es)(SET-Y)/(B)

49.	Indicate which of the following statements is <i>true</i> . Oil-soluble surfactants:
	(1) Have high HLB values.
	(2) Are hydrophilic.
	(3) Can be used as emulsifiers to produce water-in-oil emulsions.
	(4) Are efficient solubilising agents.
50.	Which statement is <i>correct</i> ?
	(1) Mainly acidic drug binds to albumin.
	(2) Mainly basic drug binds to albumin.
	(3) Acidic drug binds only to a-acid glycoprotein.
	(4) None of the above
51.	Drug X has a molecular weight of 750 daltons. From which of the following route will it get excreted?
	(1) Biliary excretion (2) Urinary excretion
	(3) Both (1) and (2) (4) Cannot say
52.	Drug disposition includes:
	(1) Drug absorption and distribution
	(2) Drug absorption and metabolism
	(3) Drug distribution, metabolism and excretion
	(4) Drug metabolism and excretion
53.	Pyrogens present in containers can be destroyed by heating the containers at:
	(1) 121°C for 15 mins (2) 121°C for 30 mins
	(3) 210°C for 4 h (4) 210°C for 1 h
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54. Which of the following structure would be an aromatic?





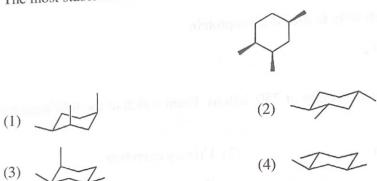


(1) i and iv

(2) i, iii and iv

(3) iii and iv

- (4) only ii
- **55.** The most stable conformation of the following compound is :



- **56.** Following pairs represent antibiotic and its source. Identify the *correct* pair :
 - (1) Griseofulvin: Bacteria
- (2) Polyenes: Fungi

(3) Colistin: Fungi

- (4) Macrolides: Actinomycetes
- 57. Testing of chemicals by OECD guideline No. 420 refers to which of the following?
 - (1) Acute oral toxicity by acute toxic class method
 - (2) Acute oral toxicity by up and down procedure
 - (3) Repeated dose 28-day toxicity study in rodents
 - (4) Acute oral toxicity by fixed dose procedure

58.	8. The labelling instruction "To be diluted 20 times its volume with water" indicadispensed product is a:	tes the
	(1) Mouthwash (2) Elixir	
	(3) Linctus (4) Mixture	
59.	9. The compound 2 - (Diethylamino) ethyl [bicyclohex-yl]-l-carboxylate hydroclis:	nloride
	(1) Dicycloverine	
100	(2) Diphenhydramine	
	(3) Both nicotinic and specific antispasmodic	
	(4) Diagonistic agent for diagnosis of thyroid gland	
60.	0. Which of the following statements about Michaelis-Menten kinetics is <i>correct</i> ?	
	(1) Km the Michaelis constant, is a measure of the affinity the enzyme as substrate.	for its
	(2) Km the Michaelis constant, is defined as the concentration of substrate requition to reach maximum velocity.	red for
	(3) Km the Michaelis constant, is defined as the dissociation of the substrate fr enzyme	om the
	(4) None of the above	
61.	1. Surfactant <i>not</i> used parentally is:	
	(1) PEG (2) Tween	
	(3) Povidone (4) Cetyl trimethyl ammonium bromid	e
62.	2. Aseptic area is :	
	(1) Class 100 area (2) Class 10 area	
	(3) Class 1000 area (4) Class 10000 area	
PHD/U	D/URS-EE-2022/(Pharmaceutical Sciences)(SET-Y)/(B)	P. T. O.

63.	pA can be defined as:	rion	of	an	antagonist	which	produces	half	of	the
	pA can be defined as: (1) negative log of molar	concentration	633	0.00						
	maximum response.									

- (2) negative log of molar concentration of an agonist which produces half of the maximum response.
- (3) negative log of molar concentration of an antagonist in the presence of which double dose of agonist required to produce same effect as produced in absence of antagonist.
- (4) negative log of molar concentration of an antagonist in the presence of which half dose of agonist required to produce same effect as produced in absence of antagonist.

64	Most	common	phase	[]	reac	tion	is:
----	------	--------	-------	----	------	------	-----

- (1) Sulphate conjugation
- (2) Glucronide conjugation

(3) Hydroxylation

(4) Methylation

65. Which of the following statements are true?

- [P] Substance P is located at sympathetic ganglia.
- [Q] Neuropeptide Y is located at postganglionic sym-pathetic neurons.
- [R] Nitric oxide located at enteric neurons.
- [S] Gonadotrophin-releasing hormone is not located at sympathetic ganglia.
- (1) P and Q

(2) P and R

(3) Q and R

(4) R and S

66. Pilocarpine is classified as:

(1) Cholinestrase inhibitor

(2) Sympathomimetic

(3) Cholinomimetic

(4) Cholinolytics

67.	Following statements are true except:				
	(1) Prolactin is a milk-synthesizing ho				
	(2) Oxytocin is a milk-ejecting hormon				
	(3) ACTH inhibits steroidogenesis in a	adrenal cortex.			
	(4) Growth hormone secretion decreas	ees and gigantism occurs.			
68.	Which of the following facilitates the a				
	(1) Chlorpromazine	(2) Ethanol			
	(3) Diazepam	(4) Imipramine			
69.	Nitric oxide is contraindicated in patier	nts with :			
	(1) Myasthemia gravis	(2) Polycethymia vera			
	(3) Cerebral degeneration	(4) All of these			
70.	Antimalarial activity of chloroquine is	due to:			
	(1) Inhibition of protein synthesis in plasmodia				
	(2) Inhibit heme polymerase enzyme				
	(3) Paralyses the plasmodia				
	(4) None of the above				
71.	D and L are a pair ofconfigur	ration.			
	(1) Relative	(2) Absolute			
	(3) Cis-trans	(4) Optical			
72.	As per Woodward-Hoffman rules for thermal condition, rotation direction for	electrocyclic reaction, for a 4n system ubonding is:	nder		
	(1) Con rotation	(2) Dis rotation			
	(3) Both Con and Dis rotations	(4) None of the above			
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73.	In which of the following structures, geometrical isomer is not possible?
, 0.	(1) Ethene (2) Propene
	(A) (1) and (2)
	(3) 2-Pentene (4) (1) and (2)
74.	is the heterocyclic compound with five membered ring.
	(1) Aziridine (2) Azole
	(3) Azoletine (4) Azoline
75.	Chemical nomenclature of procaine is:
	(1) 2-Dimethylaminoethyl 4-aminobenzoate
	(2) N, N-Diethyl-4-aminobenzoate
	(3) 4-Aminobenzamidoethyl amine
	(4) 4-Amino-2-diethylaminoethyl benzoate
76.	B-lactamase inhibitor clavunic acid is:
	(1) 1, 1-dioxo penicillanic acid
	(2) Carbapenam
	(3) Cepham
	(4) 1-oxapenam structure, which has no acyl amino side chain
77.	Which of the following statement is <i>true</i> ?
	(1) Ampicillin is an antipyretic drug.
	(2) Chloroquine is an antimalarial drug.
	(3) Amoxicillin is an antiepileptic drug.

(4) Paracetamol is an antibiotic.

78.	Dose dumping is a problem in the formulation of :		
	(1) Compressed tablets	(2) Suppositories	
	(3) Soft gel capsule	(4) Controlled release drug products	
79.	No drug, regardless of its shelf life, can	be sold after:	
	(1) 2 years	(2) 3 years	
	(3) 5 years	(4) 7 years	
80.	An unequal distribution of colour on the	e surface of the tablet is called:	
	(1) Cracking	(2) Chipping	
	(3) Picking	(4) Mottling	
81.	If a manufacturing company does <i>not</i> adhere to cGMP regulations: (1) Any drug manufactured by such company will be considered adulterated		
	(2) No action will be taken if the drug i	1 FA IMA SEE STY (13	
	(3) Company will be closed instantly	C13 bits AC976 co	
	(4) It means that necessarily there is so	mething wrong with drug	
82.	Normality of concentrated HCl is appro-	ximately:	
	(1) 11.7 N	(2) 17 N	
	(3) 35 N	(4) 71 N	
83.			
	(1) 0.1 - 0.01 g	(2) 0.01 - 0.001 g	
	(3) 0.001 - 0.0001 g	(4) < 0.0001 g	
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90. Which of the following nucleus is not detected in NMR spectroscopy? $(1)^{-1}H$ $(2)^{12}C$ $(3)^{15}N$

(4) None

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(3) Bathochromic

		19		
91	1. Which of the following drug inhibits the entry of virus in the cell?			
	(1) Zioduvadine (2) Lopinavir			
	(3) Ritonavir (4) Enfuvirtide			
92	2. Captopril exerts action by :			
	(1) Inhibiting the rennin release			
	(2) Inhibiting conversion of angiotensin I to II			
	(3) Inhibiting conversion of angiotensin II to I			
	(4) Inhibiting conversion of angiotensiogen to angiotensin I			
93.	3. HMG-CoA reductase, a key enzyme in the pathway catalyses:			
	(1) Side chain cleavage in the conversion of cholesterol to steroid hormones	- A - TO		
	(2) The reduction of the thio-ester group to an alcohol in mevalonate biosynthesis			
	(3) The reduction of the hydroxyl group of mevalonate to vitamin D.			
	(4) Steroid condensation reaction in the biosynthesis of bile acids.			
94.	l. Centroxylic stands for:			
	(1) Phloem in the centre surrounded by xylem			
	(2) Xylem in the centre surrounded by phloem			
	(3) Phloem in the centre surrounded by cambium			
	(4) Xylem in the centre surrounded by cambium			
0F	In which ayurvedic formulation preservative is <i>not</i> required?			
95.	(2) V-1:1-			
	(1) Lepa (2) Vatika (3) Asava (4) Pisti			
	(3) 110414	D.T.O		

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06	Match	the	TOI	lowing	•

Vialen die fone i 2	Herbal drug		
Basic nucleus	i. Emetine		
a. Tropne			
b. Quinoline	ii. Pilocarpine		
	iii. Cocaine		
c. Isoquinoline	i. Ovining		
d. Imidazole	iv. Quinine		
e. Purine	v. Caffiene		

- (1) a-iii, b-iv, c-ii, d-i, e-v
- (2) a-iii, b-iv, c-i, d-ii, e-v
- (3) a-iii, b-i, c-iv, d-ii, e-v
- (4) a-iv, b-iii, c-i, d-ii, e-v
- 97. Anthraquinone glycosides of cascara contain:
 - (1) O-glycosides

(2) N-glycosides

(3) C-glycosides

- (4) S-glycosides
- 98. Tannins do not respond to:
 - (1) Goldbeater's skin test
- (2) Phenazone test

(3) Match-stick test

- (4) Borntrager's test
- 99. Stains useful for identifying fungus include the following, except:
 - (1) Gram stain

- (2) Haernatoxylin and eosin
- (3) Gomorimethanamine silver
- (4) PAS (Periodic Acid-Schiff)
- **100.** The following contain live-attenuated live vaccines, except:
 - (1) Polio

(2) Hepatitis A

(3) Yellow fever

(4) Measles

Total No. of Printed Pages: 21

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ARE ASKED TO DO SO)

SET-Y

10063

PHD/URS-EE-DEC-2022

SUBJECT: Pharmaceutical Sciences

	Sr. No
Time : 11/4 Hours Roll No. (in figures)	Max. Marks : 100 Total Questions : 100 (in words)
Name	Date of Birth
Father's Name	Mother's Name
Date of Examination	
(Signature of the Candidate)	(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

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- 2. The candidates must return the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfairmeans / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
- 3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
- 4. Question Booklet along with answer key of all the A, B, C & D code shall be got uploaded on the University website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the Question Booklet/Answer Key within 24 hours of uploading the same on the University Website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case, will be considered.
- 5. The candidate must not do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers must not be ticked in the question booklet.
- 6. There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
- 7. Use only Black or Blue Ball Point Pen of good quality in the OMR Answer-Sheet.
- 8. Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.

- 1. Surfactant *not* used parentally is:
 - (1) PEG
 - (2) Tween
 - (3) Povidone
 - (4) Cetyl trimethyl ammonium bromide
- 2. Aseptic area is:
 - (1) Class 100 area

(2) Class 10 area

(3) Class 1000 area

- (4) Class 10000 area
- 3. pA can be defined as:
 - (1) negative log of molar concentration of an antagonist which produces half of the maximum response.
 - (2) negative log of molar concentration of an agonist which produces half of the maximum response.
 - (3) negative log of molar concentration of an antagonist in the presence of which double dose of agonist required to produce same effect as produced in absence of antagonist.
 - (4) negative log of molar concentration of an antagonist in the presence of which half dose of agonist required to produce same effect as produced in absence of antagonist.
- **4.** Most common phase II reaction is :
 - (1) Sulphate conjugation
 - (2) Glucronide conjugation
 - (3) Hydroxylation
 - (4) Methylation

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5.	Which of the following statements are the	• •	
	[P] Substance P is located at sympathetic ganglia.		
	[Q] Neuropeptide Y is located at postganglionic sym- pathetic neurons.		
	[R] Nitric oxide located at enteric neurons.		
	[S] Gonadotrophin-releasing hormone is not located at sympathetic gang		
	(1) P and Q	(2) P and R	
	(3) Q and R	(4) R and S	
6.	Pilocarpine is classified as:		
	(1) Cholinestrase inhibitor	(2) Sympathomimetic	
	(3) Cholinomimetic	(4) Cholinolytics	
7.	Following statements are <i>true</i> except:		
	(1) Prolactin is a milk-synthesizing horn	mone.	
	(2) Oxytocin is a milk-ejecting hormone	e.	
	(3) ACTH inhibits steroidogenesis in ac	drenal cortex.	
	(4) Growth hormone secretion decrease	es and gigantism occurs.	
8.	Which of the following facilitates the ac	etion of GABA ?	
	(1) Chlorpromazine	(2) Ethanol	
	(3) Diazepam	(4) Imipramine	
9.	Nitric oxide is contraindicated in patien	ts with :	
	(1) Myasthemia gravis	(2) Polycethymia vera	
	(3) Cerebral degeneration	(4) All of these	
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- 10. Antimalarial activity of chloroquine is due to:
 - (1) Inhibition of protein synthesis in plasmodia
 - (2) Inhibit heme polymerase enzyme
 - (3) Paralyses the plasmodia
 - (4) None of the above
- 11. Protoplasts can be produced from suspension cultures, callus tissues or intact tissues by enzymatic treatment with:
 - (1) cellulotyic enzymes
- (2) pectolytic enzyme

(3) proteolytic enzyme

- (4) both (1) and (2)
- Match the phytoconstituent with the biosynthetic pathway by which it is biosynthesised:

Column-I	Column-II
(i) Fatty acids	(a) Acetate Mevalonate Pathway
(ii) Steroids	(b) Acetate Malonate Pathway
(iii) Flavonoids	(c) Photosynthesis
(iv) Sugars	(d) Shikimic Acid Pathway

(1) i-a; ii-b; iii-c; iv-d

(2) i-d: ii-a; iii-b; iv-c

(3) i-a; ii-d; iii-b; iv-c

- (4) i-b; ii-a; iii-d; iv-c
- 13. Which of the following methods is **not** used for extracting volatile oils from aromatic plants?
 - (1) Hydro-distillation

(2) Ecuelle

(3) Enfleurage

(4) Hot continuous Percolation

C

20.	Which	statement	is	correct '	7
-----	-------	-----------	----	-----------	---

- (1) Mainly acidic drug binds to albumin.
- (2) Mainly basic drug binds to albumin.
- (3) Acidic drug binds only to a-acid glycoprotein.
- (4) None of the above

21. If a manufacturing company does *not* adhere to cGMP regulations:

- (1) Any drug manufactured by such company will be considered adulterated
- (2) No action will be taken if the drug is safe
- (3) Company will be closed instantly
- (4) It means that necessarily there is something wrong with drug

22. Normality of concentrated *HCl* is approximately :

(1) 11.7 N

(2) 17 N

(3) 35 N

(4) 71 N

23. The sample size in Meso analysis is:

(1) 0.1 - 0.01 g

(2) 0.01 - 0.001 g

(3) 0.001 - 0.0001 g

(4) < 0.0001 g

24. Precision of an analytical experiment can be increased by minimization of:

(1) Personal errors

(2) Instrumental errors

(3) Indeterminate errors

(4) Determinate errors

25. Mohr's method is carried out at pH:

- (1) 6-9
- (2) 8-10
- (3) 4-7
- (4) 3-6

26.	Process of convers called:	ion of aggregated	precipitates into collo	vidal form during washing is
	(1) Coagulation		(2) Peptisation	10000
	(3) Colloid formati	ion	(4) None of these	
27.	Calomel is a mixtur	re of :		
	(1) Hg_2Cl_2 and KC	7	(2) Hg_2Cl_2 , Hg and	d <i>KCI</i>
	(3) $HgCl_2$ and KCl		(4) $HgCl_2$, Hg and	The state of the s
28.				
	(1) 215 nm	(2) 235 nm	(3) 253 nm	(4) 207 nm
29. The $n \to \pi^*$ transition undergoes shift in a polar solver			olvent	
	(1) Hypsochromic		(2) Hyperchromic	
	(3) Bathochromic		(4) None	
30.				or all
	$(1)^{-1}H$	(2) ^{12}C	(3) 15N	troscopy? $ (4)^{-19}F $
31.	The normal concent	ration of serum bil	lirubin is :	120-110-1
	(1) 0.2-1 mg/dl		(2) 0.2-0.4 mg/dl	better of the said of the said
	(3) 1-2 mg/dl		(4) 2-3 mg/dl	
32. As quickly dividing cells continue to undergo change (genetic mutation), they as:			netic mutation), they may	
	(1) Hyperextension			
	(3) Hyperplasia		(2) Morphology	
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- **33.** Which of the following responsibility of the clinical pharmacist is in direct patient care area?
 - (1) Supervision of drug administration techniques
 - (2) Providing drug information to the physician and nurses
 - (3) Identify drugs brought into the hospital by patients
 - (4) Reviewing of each patients drug administration forms periodically to ensure all doses have been administered
- **34.** Which of the following statements best describe a lead compound?
 - (1) A compound that contains the element lead (Pb).
 - (2) A compound from the research laboratory which is chosen to go forward for pre-clinical and clinical trials.
 - (3) A molecule that shows some activity of interest and serves as the starting point for development of drug.
 - (4) The first compound of the structural class of compounds to reach the market.
- **35.** What is the area designed for the preparation of sterile products called?
 - (1) Clean room

(2) Formulary

(3) In-patient pharmacy

- (4) None of the above
- 36. The Second Law of Thermodynamics stated that:
 - (1) It is impossible to take heat from a hotter reservoir and convert it completely into work by a cyclic process without transferring a part of heat to a cooler reservoir
 - (2) It is impossible to transfer heat from a body at a lower temperature to one at higher temperature
 - (3) The efficiency of heat engine is always less than 1
 - (4) All of the above

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37.	The molarities of 0.1N HCl and 0.1N	H_2SO_4 is respectively:
	(1) 0.1M HCl and 0.05M H ₂ SO ₄	
	(2) 0.05M <i>HCl</i> and 0.1M <i>H</i> ₂ <i>SO</i> ₄	
	(3) 1M <i>HCl</i> and 0.2M <i>H</i> ₂ <i>SO</i> ₄	
	(4) 0.05M <i>HCl</i> and 0.1M <i>H</i> ₂ <i>SO</i> ₄	
38.	Which of the following includes all the	e aims of kinetics ?
	i. To measure the rate of reaction	
	ii. To be able to predict the rate of rea	action
	iii. To be able to establish the mechan	ism by which reaction occurs
	iv. To be able to control the reaction	
	(1) i, ii and iii	(2) i and ii
	(3) i and iii	(4) i, ii, iii and iv
39.	The boiling point of pure water is 100 of pure water, the boiling point will be	°C, upon the addition of 10g of <i>NaCl</i> in 100 m:
	(1) 100°C	(2) 92°C
	(3) 107°C	(4) No change
40.	There are several advantages of solid Which of the following statements is no	phase synthesis over conventional synthesis
	(1) Excess reagents can be used to force	e the equilibrium of a reaction to product
	(2) Impurities and by products are easil	y removed
	(3) Intermediates do not need to be isol	
	(4) Structures can be strongly linked to removed	to the solid support such that they can not be

C		
41.	D and L are a pair of configuration. (2) Absolute (3) Cis-trans (4) Optical	
	(1) Relative (2) Absolute (3) CIS-traits	
	As per Woodward-Hoffman rules for electrocyclic reaction, for a 4n system	under
42.	As per Woodward-Horman rules for electrony thermal condition, rotation direction for bonding is:	
	(1) Con rotation (2) Dis rotation (2) Dis rotation (3) Roth Con and Dis rotations (4) None of the above	
	(3) Bour Con and 2 to	
10	In which of the following structures, geometrical isomer is <i>not</i> possible?	
43.	(1) Ethene (2) Propene	
	(A) (1) and (2)	
	(3) 2-Pentene (4) (1) and (2)	
44.	is the heterocyclic compound with five membered ring.	
	(1) Aziridine (2) Azole (3) Azoletine (4) Azoline	
	THE SECOND CO. LANSING CO.	
45.	Chemical nomenclature of procaine is:	
	(1) 2-Dimethylaminoethyl 4-aminobenzoate	
	(2) N, N-Diethyl-4-aminobenzoate	
	(3) 4-Aminobenzamidoethyl amine	
	(4) 4-Amino-2-diethylaminoethyl benzoate	
	(+) + 1 mmo 2	
46.	B-lactamase inhibitor clavunic acid is:	
	(1) 1, 1-dioxo penicillanic acid	
	(2) Carbapenam	
	(3) Cepham	
	(4) 1-oxapenam structure, which has no acyl amino side chain	
	(1) I onaponani structure, winest the	

10

47	Which of the following statement is true	7	
41.	(1) Ampicillin is an antipyretic drug.		
	(2) Chloroquine is an antimalarial drug.		
	(3) Amoxicillin is an antiepileptic drug.		
	(4) Paracetamol is an antibiotic.		
		lation of :	
48.	Dose dumping is a problem in the formu		
	(1) Compressed tablets	(2) Suppositories	
	(3) Soft gel capsule	(4) Controlled relea	se drug products
	No drug, regardless of its shelf life, can	be sold after :	
49.			
	(1) 2 years	(2) 3 years	
	(3) 5 years	(4) 7 years	
50.	An unequal distribution of colour on the	surface of the tablet	is called:
	(1) Cracking (2) Chipping	(3) Picking	(4) Mottling
51.	Which of the following drug inhibits the	e entry of virus in the	cell ?
	(1) Zioduvadine (2) Lopinavir		
		(3) Ritollavii	(4) Enfuvirtide
52.	Captopril exerts action by:		
	(1) Inhibiting the rennin release		
	(2) Inhibiting conversion of angiotensis	n I to II	
	(3) Inhibiting conversion of angiotensin II to I		
	(4) Inhibiting conversion of angiotensi	Ogen to anaiss	
HD/U	JRS-EE-2022/(Pharmaceutical Science	ogen to angiotensin I	
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- 53. HMG-CoA reductase, a key enzyme in the pathway catalyses:
 - (1) Side chain cleavage in the conversion of cholesterol to steroid hormones.
 - (2) The reduction of the thio-ester group to an alcohol in mevalonate biosynthesis.
 - (3) The reduction of the hydroxyl group of mevalonate to vitamin D.
 - (4) Steroid condensation reaction in the biosynthesis of bile acids.

54. Centroxylic stands for:

- (1) Phloem in the centre surrounded by xylem
- (2) Xylem in the centre surrounded by phloem
- (3) Phloem in the centre surrounded by cambium
- (4) Xylem in the centre surrounded by cambium
- **55.** In which ayurvedic formulation preservative is *not* required?
 - (1) Lepa
- (2) Vatika
- (3) Asava
- (4) Pisti

56. Match the following:

Basic nucleus	oriolla e biss	Herbal drug
. Tropne	MAJA Shoe	i. Emetine
Quinoline	Short & Alkane	ii. Pilocarpine
Isoquinoline	no. It A s long	iii. Cocaine
. Imidazole	olam C nine art	iv. Quinine
. Purine	Taliotticzi suiwo	v. Caffiene

- (1) a-iii, b-iv, c-ii, d-i, e-v
 - (2) a-iii, b-iv, c-i, d-ii, e-v
- (3) a-iii, b-i, c-iv, d-ii, e-v (4) a-iv, b-iii, c-i, d-ii, e-v

57. Anthraquinone glycosides of cascara contain:		
	(1) O-glycosides	(2) N-glycosides
	(3) C-glycosides	(4) S-glycosides
58	. Tannins do <i>not</i> respond to :	
50	(1) Goldbeater's skin test	(2) Phenazone test
	(3) Match-stick test	(4) Borntrager's test
	(5) Water-stick test	(1) Bomagers test
59.	Stains useful for identifying fungus in	nclude the following, except:
	(1) Gram stain	(2) Haernatoxylin and eosin
	(3) Gomorimethanamine silver	(4) PAS (Periodic Acid-Schiff)
60.	The following contain live-attenuated	l live vaccines, except :
	(1) Polio	(2) Hepatitis A
	(3) Yellow fever	(4) Measles
61.	Identify the <i>correct</i> sequence of acidit	ty:
	(1) Phenol > Alcohol > Carboxylic ad	cid > Alkane
	(2) Alcohol > Phenol > Carboxylic ac	eid > Alkane
	(3) Carboxylic acid > Phenol > Alcoh	nol > Alkane
	(4) Carboxylic acid > Alcohol > Phen	nol > Alkane
62.	Out of 24 mols of ATP formed in To "substrate level" by which of the follow	CA cycle, 2 molecules of ATP can be formed wing reaction?
	(1) Citric acid → Isocitric acid	(2) Isocitrate → Oxaloacetate
	(3) Succinic acid → Fumarate	(4) Succinyl CoA → Succinic acid
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		1.	
63	myashenic crisis and cholinergic crisis, given intravenously, is		
	(1) Pyridostigmine	(2) Edrophonium	
	(3) Physostigmine	(4) Neostigmine	
64.	A sample of a powder with true density have bulk volume of 80.33 cm ³ when putter the porosity.	ty of 3 g/cm ³ and weighing 100 g was found to blaced in a 100-ml graduated cylinder. Calculate	
	(1) 0.58 (2) 0.41	(3) 0.31 (4) 0.25	
65.	Which of the following method is used	to obtain surface tension ?	
	(1) X-ray diffraction	(2) Karl Fischer method	
	(3) Capillary rise method	(4) Sedimentation method	
66.	viscosity divided by the at specific		
	(1) Weight of liquid	(2) Density of liquid	
	(3) Unit time	(4) None of the above	
67.	Which of the following is <i>not</i> a primary	amine ?	
	(1) 3-Hexylamine	(2) 1-Butylamine	
	(3) Diethylamine	(4) Cyclohexylamine	
68.	The migration of a group from carbonreaction.	to electron-deficient oxygen is an example of	
	(1) Baeyer-Villiger rearrangements		
	(2) Pinacole-Pinacolone rearrangements		
	(3) Beckmann rearrangement		
PHD	(4) Benzillic acid rearrangement		
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	(1) Sublimation	(2)	Chromatography
	(3) Distillation	(4)	None
70	. A meso compound :		
	(1) contains a plane of	symmetry	
	(2) is optically inactive	:	
	(3) is an achiral molecular	ule that contains chira	lity center
	(4) is characterized by	all of the above chara	cteristics
71.	Coomb's test is for:		
	(1) Typhoid	(2)	Syphillis
	(3) Yellow fever	(4)	Antiglobulin
72.	Fragile heat sensitive eq	uipments are sterilise	d by which method ?
	(1) Gamma radiation	(2)	Ethylene oxide
	(3) Chemical sterlisation	n (4)	None
73.	License for bonded and a (1) Drug Inspector (2) Excise Commissione (3) Director of health set (4) State Government	er	ry is issued by:
74.	Drugs and Cosmetics Act (1) 2005	t has been latest amer	nded in the year:
	(2)	2014 (3) 2	
PHD/U	RS-EE-2022/(Pharmace	utical Sciences)(SE	F. W. W.C.

69. A mixture of amino acid can be separated by:

75. Under DPCO-2013, how a ceiling price is calculated:

- (1) Based on the simple averaging of the market prices of different brands of medicines having a market share of 1% and above, based on the Moving Annual Turnover (MAT).
- (2) Based on the simple averaging of the market prices of leading brands of medicines having a market share of 1.5% and above, based on the Moving Annual Turnover (MAT).
- (3) Based on the simple averaging of the market prices of different brands of medicines having a market share of 2% and above, based on the Moving Annual Turnover (MAT).
- (4) Based on the simple averaging of the market prices of different brands of medicines having a market share of 2.5% and above, based on the Moving Annual Turnover (MAT).

76.	Fluid	energy	mill	works	on	princip	ple	of	

(1) impact

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(2) compression

(3) impact and attrition

(4) rotor and stator

77. Which equipment is used for mixing immiscible liquids?

(1) Airjet mixer

(2) Jet mixer

(3) Silverson mixer

(4) Sigma mixer

78. The mechanism of intake of DNA fragments from the surrounding medium by a cell is called:

(1) Transformation

(2) Transduction

(3) Conjugation

(4) Both (1) and (2)

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- (1) Processed RNA containing only exons are introduced into the embryo
- (2) Entire foreign nucleus is introduced into the blastocyst stage enucleated embryo
- (3) Desired DNA is microinjected into fertilised eggs followed by the implantation of the embryo in a foster mother
- (4) c-DNA of the desired gene is introduced into animal embryos and implanted in the foster mother

80. What is meant by 'Organ culture'?

- (1) Maintenance alive of a whole organ, after removal from the organism by partial immersion in a nutrient fluid
- (2) Introduction of a new organ in an animal body with a view to create genetic mutation in the progenies of that animal
- (3) Cultivation of organs in a laboratory through the synthesis of tissues
- (4) The aspects of culture in community which are mainly dedicated by the need of a specified organ of the human body
- **81.** Which of the following combinations of molecular formula and molecular mass does *not* comply with the Nitrogen rule?

(1)
$$C_2H_7N = 43$$

(2)
$$C_5H_5N = 79$$

(3)
$$C_5 H_6 N_2 = 95$$

(4)
$$C_7 H_6 O_2 = 122$$

82. The most efficient method for analysis of suspensions is:

(1) Turbidimetry

(2) Infrared spectroscopy

(3) UV-VIS spectroscopy

(4) NMR spectroscopy

83.	Which of the following is used as light source spectrophotometer?	e in atomic absorption
	(1) Tungsten Filament lamp (2) Xenon Arc land	mp
	(3) Globar source (4) Hollow catho	d lamp
a4.	Which of the following is a basic amino acid?	
01.	(1) Alanine (2) Arginine	
	(3) Leucine (4) Tyrosine	
85.	85. Synthesis of glucose from fat is called as:	
00.	(1) Glycolysis (2) Gluconeoger	nesis
	(3) Glucosapogenesis (4) Ketogenesis	
86.	86. Which statement best describes the oxidation of odd chair (1) Additional specific enzymes are needed for the oxida	
	(2) One carbon is removed in one cycle.	
	(3) End product is propionyl Co-enzyme A.	
	(4) Hydroxy fatty acid are produced.	
87.	87. Which of the following vitamins do <i>not</i> participate in TO	CA cycle ?
	(1) Pentothenic acid (2) Lipoic acid	
	(3) Folic acid (4) Riboflavir	m emiledation word (b)
88.	88. A nucleoside is composed of:	Phosphate
	1 Dusc + Sugar	gar + Phosphate
DDr	(3) Base + Phosphate (4) None of t	
(III)/	PED/URS-EE-2022/(Pharmaceutical Sciences)(SET-Y)/(C)	

- (1) Highest Equivalent Theoretical Plate
- (2) Height Equivalent to Theoretical Plate
- (3) Highest Entropic Theoretical Plate
- (4) Hollow Equilibrated Theoretical Plate
- **90.** Which of the following instrumental parameters do *not* affect chromatographic resolution of analyte ?
 - (1) Particle size of stationary phase
 - (2) Flow rate of mobile phase
 - (3) Length of stationary phase
 - (4) None of these
- **91.** Drug X has a molecular weight of 750 daltons. From which of the following route will it get excreted?
 - (1) Biliary excretion

(2) Urinary excretion

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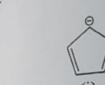
(3) Both (1) and (2)

- (4) Cannot say
- 92. Drug disposition includes:
 - (1) Drug absorption and distribution
 - (2) Drug absorption and metabolism
 - (3) Drug distribution, metabolism and excretion
 - (4) Drug metabolism and excretion
- 93. Pyrogens present in containers can be destroyed by heating the containers at:
 - (1) 121°C for 15 mins

(2) 121°C for 30 mins

(3) 210°C for 4 h

(4) 210°C for 1 h



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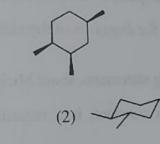
(1) i and iv

(2) i, iii and iv

(3) iii and iv

(4) only ii

95. The most stable conformation of the following compound is:





(3)



96. Following pairs represent antibiotic and its source. Identify the *correct* pair:

(1) Griseofulvin: Bacteria

(2) Polyenes: Fungi

(3) Colistin: Fungi

(4) Macrolides: Actinomycetes

97. Testing of chemicals by OECD guideline No. 420 refers to which of the following?

- (1) Acute oral toxicity by acute toxic class method
- (2) Acute oral toxicity by up and down procedure
- (3) Repeated dose 28-day toxicity study in rodents
- (4) Acute oral toxicity by fixed dose procedure

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- **98.** The labelling instruction "To be diluted 20 times its volume with water" indicates the dispensed product is a :
 - (1) Mouthwash

(2) Elixir

(3) Linctus

- (4) Mixture
- 99. The compound 2 (Diethylamino) ethyl [bicyclohex-yl]-l-carboxylate hydrochloride is:
 - (1) Dicycloverine
 - (2) Diphenhydramine
 - (3) Both nicotinic and specific antispasmodic
 - (4) Diagonistic agent for diagnosis of thyroid gland
- 100. Which of the following statements about Michaelis-Menten kinetics is correct?
 - (1) Km the Michaelis constant, is a measure of the affinity the enzyme as for its substrate.
 - (2) Km the Michaelis constant, is defined as the concentration of substrate required for the reaction to reach maximum velocity.
 - (3) Km the Michaelis constant, is defined as the dissociation of the substrate from the enzyme
 - (4) None of the above

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Total No. of Printed Pages: 21

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SET-Y

SUBJECT: Pharmaceutical Sciences

10068

		Sr. No
Time: 11/4 Hours Roll No. (in figures)	Max. Marks : 100 (in words)	Total Questions : 100
Name		Birth
Father's Name	Mother's Name	
Date of Examination	the state of the s	
		(0) (1) (1) (1)
(Signature of the Candidate)		(Signature of the Invigilator)

CANDIDATES MUST READ THE FOLLOWING INFORMATION/INSTRUCTIONS BEFORE STARTING THE QUESTION PAPER.

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- 2. The candidates *must return* the question booklet as well as OMR Answer-Sheet to the Invigilator concerned before leaving the Examination Hall, failing which a case of use of unfairmeans / mis-behaviour will be registered against him / her, in addition to lodging of an FIR with the police. Further the answer-sheet of such a candidate will not be evaluated.
- 3. Keeping in view the transparency of the examination system, carbonless OMR Sheet is provided to the candidate so that a copy of OMR Sheet may be kept by the candidate.
- 4. Question Booklet along with answer key of all the A, B, C & D code shall be got uploaded on the University website immediately after the conduct of Entrance Examination. Candidates may raise valid objection/complaint if any, with regard to discrepancy in the Question Booklet/Answer Key within 24 hours of uploading the same on the University Website. The complaint be sent by the students to the Controller of Examinations by hand or through email. Thereafter, no complaint in any case, will be considered.
- 5. The candidate *must not* do any rough work or writing in the OMR Answer-Sheet. Rough work, if any, may be done in the question booklet itself. Answers *must not* be ticked in the question booklet.
- 6. There will be no negative marking. Each correct answer will be awarded one full mark. Cutting, erasing, overwriting and more than one answer in OMR Answer-Sheet will be treated as incorrect answer.
- 7. Use only Black or Blue Ball Point Pen of good quality in the OMR Answer-Sheet.
- 8. Before answering the questions, the candidates should ensure that they have been supplied correct and complete booklet. Complaints, if any, regarding misprinting etc. will not be entertained 30 minutes after starting of the examination.

1. Which of the following combinations not comply with the Nitrogen rule?	s of molecular formula and molecular mass does
(1) $C_2H_7N = 43$	(2) $C_5H_5N = 79$
(3) $C_5 H_6 N_2 = 95$	$(4) C_7 H_6 O_2 = 122$
2. The most efficient method for analysis	s of suspensions is :
(1) Turbidimetry	(2) Infrared spectroscopy
(3) UV-VIS spectroscopy	(4) NMR spectroscopy
3. Which of the following is use spectrophotometer?	ed as light source in atomic absorption
(1) Tungsten Filament lamp	(2) Xenon Arc lamp
(3) Globar source	(4) Hollow cathod lamp
4. Which of the following is a basic amino	acid?
(1) Alanine	(2) Arginine
(3) Leucine	(4) Tyrosine
5. Synthesis of glucose from fat is called a	s:
(1) Glycolysis	(2) Gluconeogenesis
(3) Glucosapogenesis	(4) Ketogenesis
6. Which statement best describes the oxide	ation of odd chain fatty acids ?
(1) Additional specific enzymes are nee	
(2) One carbon is removed in one cycle.	
(3) End product is propionyl Co-enzyme	
(4) Hydroxy fatty acid are produced.	
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7. Which of the following vitamins do <i>not</i>	participate in TCA cycle ?
(1) Pentothenic acid	(2) Lipoic acid
(3) Folic acid	(4) Riboflavin
(21 4 10 36 3 10)	
8. A nucleoside is composed of :	
(1) Base + Sugar	(2) Base + Sugar + Phosphate
(3) Base + Phosphate	(4) None of these
9. The <i>correct</i> expansion of acronym HET	TP is:
(1) Highest Equivalent Theoretical Plan	
(2) Height Equivalent to Theoretical Pl	late
(3) Highest Entropic Theoretical Plate	
(4) Hollow Equilibrated Theoretical Pl	late
	al parameters do not affect chromatographic
(1) Particle size of stationary phase	(2) Flow rate of mobile phase
(3) Length of stationary phase	(4) None of these
11. Which of the following drug inhibits the	he entry of virus in the cell?
(1) Zioduvadine (2) Lopinavir	(3) Ritonavir (4) Emuvilide
12. Captopril exerts action by:(1) Inhibiting the rennin release(2) Inhibiting conversion of angioten(3) Inhibiting conversion of angioten	SIN I to II
(3) Inhibiting conversion of angioten(4) Inhibiting conversion of angioten	siogen to angiotensin I
(4) Inhibiting conversion of Scien	ices)(SET-Y)/(D)
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- **13.** HMG-CoA reductase, a key enzyme in the pathway catalyses :
 - (1) Side chain cleavage in the conversion of cholesterol to steroid hormones.
 - (2) The reduction of the thio-ester group to an alcohol in mevalonate biosynthesis.
 - (3) The reduction of the hydroxyl group of mevalonate to vitamin D.
 - (4) Steroid condensation reaction in the biosynthesis of bile acids.
- 14. Centroxylic stands for:
 - (1) Phloem in the centre surrounded by xylem
 - (2) Xylem in the centre surrounded by phloem
 - (3) Phloem in the centre surrounded by cambium
 - (4) Xylem in the centre surrounded by cambium
- **15.** In which ayurvedic formulation preservative is *not* required?
 - (1) Lepa
- (2) Vatika
- (3) Asava
- (4) Pisti

16. Match the following:

	Basic nucleus	Herbal drug
a.	Tropne	i. Emetine
b.	Quinoline	ii. Pilocarpine
c.	Isoquinoline	iii. Cocaine
d.	Imidazole	iv. Quinine
·	Purine	v. Caffiene

- (1) a-iii, b-iv, c-ii, d-i, e-v
- (2) a-iii, b-iv, c-i, d-ii, e-v
- (3) a-iii, b-i, c-iv, d-ii, e-v
- (4) a-iv, b-iii, c-i, d-ii, e-v

17.	Anthraquinone glycosides of cascara c	ontain:	
	(1) O-glycosides	(2) N-glycosides	
	(3) C-glycosides	(4) S-glycosides	
40	Tannins do <i>not</i> respond to :		
18.	(1) Goldbeater's skin test	(2) Phenazone test	
	(3) Match-stick test	(4) Borntrager's test	
19.	Stains useful for identifying fungus inc	clude the following, except:	
13.	(1) Gram stain		
	(2) Haernatoxylin and eosin		
	(3) Gomorimethanamine silver		
	(4) PAS (Periodic Acid-Schiff)		
20.	The following contain live-attenuated		
	(1) Polio	(2) Hepatitis A	
	(3) Yellow fever	(4) Measles	
21.	The normal concentration of serum bilirubin is:		
	(1) 0.2-1 mg/dl	(2) 0.2-0.4 mg/dl	
	(3) 1-2 mg/dl	(4) 2-3 mg/dl	
	As quickly dividing cells continue to begin to look abnormal and disorganias:	o undergo change (genetic mutation), they mag zed. This stage of a transforming cell is know	
1	(1) Hyperextension	(2) Morphology	
((3) Hyperplasia	(4) Dysplasia	
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- 23. Which of the following responsibility of the clinical pharmacist is in direct patient care area?
 - (1) Supervision of drug administration techniques
 - (2) Providing drug information to the physician and nurses
 - (3) Identify drugs brought into the hospital by patients
 - (4) Reviewing of each patients drug administration forms periodically to ensure all doses have been administered
- 24. Which of the following statements best describe a lead compound?
 - (1) A compound that contains the element lead (Pb).
 - (2) A compound from the research laboratory which is chosen to go forward for pre-clinical and clinical trials.
 - (3) A molecule that shows some activity of interest and serves as the starting point for development of drug.
 - (4) The first compound of the structural class of compounds to reach the market.
- What is the area designed for the preparation of sterile products called?
 - (1) Clean room

(2) Formulary

(3) In-patient pharmacy

(4) None of the above

- **26.** The Second Law of Thermodynamics stated that :
 - (1) It is impossible to take heat from a hotter reservoir and convert it completely into work by a cyclic process without transferring a part of heat to a cooler reservoir
 - (2) It is impossible to transfer heat from a body at a lower temperature to one at higher temperature
 - (3) The efficiency of heat engine is always less than 1
 - (4) All of the above

27.	The molarities of $0.1NHCl$ and $0.1NH_2$	SO_4 is respectively:		
	(1) $0.1M\ HCl$ and $0.05M\ H_2SO_4$			
	(2) 0.05M HCl and 0.1M H_2SO_4			
	(3) 1M <i>HCl</i> and 0.2M <i>H</i> ₂ <i>SO</i> ₄			
	(4) 0.05M <i>HCl</i> and 0.1M <i>H</i> ₂ <i>SO</i> ₄			
28.	Which of the following includes all the aims of kinetics?			
	i. To measure the rate of reaction			
	ii. To be able to predict the rate of reaction			
	iii. To be able to establish the mechanism by which reaction occurs			
	iv. To be able to control the reaction			
	(1) i, ii and iii	(2) i and ii		
	(3) i and iii	(4) i, ii, iii and iv		
29.	The boiling point of pure water is 100°C, upon the addition of 10g of <i>NaCl</i> in 100 ml of pure water, the boiling point will be:			
	(1) 100°C	(2) 92°C		
	(3) 107°C	(4) No change		
30	There are several advantages of solid phase synthesis over conventional synthesis. Which of the following statements is <i>not</i> an advantage?			
	(1) Excess reagents can be used to force the equilibrium of a reaction to product			
	(2) Impurities and by products are easily removed			
	(3) Intermediates do not need to be isolated and purified			
	(4) Structures can be strongly linked removed	to the solid support such that they can not be		
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3	1. Surfactant <i>not</i> used parentall	y is:	
	(1) PEG	(2) Tween	
	(3) Povidone	(4) Cetyl trimethyl ammonium bromide	
3:	2. Aseptic area is:		
	(1) Class 100 area	(2) Class 10 area	
	(3) Class 1000 area	(4) Class 10000 area	
33	a. pA can be defined as:		
	 negative log of molar concentration of an antagonist which produces half of the maximum response. 		
	(2) negative log of molar concentration of an agonist which produces half of the maximum response.		
	(3) negative log of molar concentration of an antagonist in the presence of which double dose of agonist required to produce same effect as produced in absence of antagonist.		
	(4) negative log of molar concentration of an antagonist in the presence of which half dose of agonist required to produce same effect as produced in absence of antagonist.		
34.	Most common phase II reaction	n is:	
	(1) Sulphate conjugation	(2) Glucronide conjugation	
	(3) Hydroxylation	(4) Methylation	
35.	Which of the following statements are <i>true</i> ?		
	[P] Substance P is located at sympathetic ganglia.		
	[Q] Neuropeptide Y is located at postganglionic sym- pathetic neurons.		
	[R] Nitric oxide located at enteric neurons.		
	[S] Gonadotrophin-releasing ho	ormone is not located at sympathetic ganglia.	

(1) P and Q

(2) P and R (3) Q and R

(4) R and S

36.	Pilocarpine is classified as: (1) Cholinestrase inhibitor (3) Cholinomimetic (4) Cholinolytics
37.	Following statements are <i>true</i> except: (1) Prolactin is a milk-synthesizing hormone. (2) Oxytocin is a milk-ejecting hormone. (3) ACTH inhibits steroidogenesis in adrenal cortex.
	(4) Growth hormone secretion decreases and gigantism occurs.
38.	Which of the following facilitates the action of GABA?
	(1) Chlorpromazine (2) Ethanol
	(3) Diazepam (4) Imipramine
39.	Nitric oxide is contraindicated in patients with:
	(1) Myasthemia gravis (2) Polycethymia vera
	(3) Cerebral degeneration (4) All of these
40.	Antimalarial activity of chloroquine is due to:
	(1) Inhibition of protein synthesis in plasmodia
	(2) Inhibit heme polymerase enzyme
	(3) Paralyses the plasmodia
	(4) None of the above
41.	Drug X has a molecular weight of 750 daltons. From which of the following route will it get excreted?
	(1) Biliary excretion (2) Urinary excretion
	(3) Both (1) and (2) (4) Cannot say
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- **42.** Drug disposition includes :
 - (1) Drug absorption and distribution
 - (2) Drug absorption and metabolism
 - (3) Drug distribution, metabolism and excretion
 - (4) Drug metabolism and excretion
- 43. Pyrogens present in containers can be destroyed by heating the containers at:
 - (1) 121°C for 15 mins

(2) 121°C for 30 mins

(3) 210°C for 4 h

- (4) 210°C for 1 h
- 44. Which of the following structure would be an aromatic?









(1) i and iv

(2) i, iii and iv

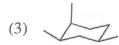
(3) iii and iv

- (4) only ii
- **45.** The most stable conformation of the following compound is :









I

0

46. Following pairs represent antibiotic and its source. Identify the correct pair:

(1) Griseofulvin: Bacteria

(2) Polyenes: Fungi

(3) Colistin: Fungi

(4) Macrolides: Actinomycetes

47. Testing of chemicals by OECD guideline No. 420 refers to which of the following?

(1) Acute oral toxicity by acute toxic class method

(2) Acute oral toxicity by up and down procedure

(3) Repeated dose 28-day toxicity study in rodents

(4) Acute oral toxicity by fixed dose procedure

48. The labelling instruction "To be diluted 20 times its volume with water" indicates the dispensed product is a :

(1) Mouthwash

(2) Elixir

(3) Linctus

(4) Mixture

49. The compound 2 - (Diethylamino) ethyl [bicyclohex-yl]-l-carboxylate hydrochloride is:

(1) Dicycloverine

(2) Diphenhydramine

(3) Both nicotinic and specific antispasmodic

(4) Diagonistic agent for diagnosis of thyroid gland

50. Which of the following statements about Michaelis-Menten kinetics is correct?

(1) Km the Michaelis constant, is a measure of the affinity the enzyme as for its substrate.

(2) Km the Michaelis constant, is defined as the concentration of substrate required for the reaction to reach maximum velocity.

(3) Km the Michaelis constant, is defined as the dissociation of the substrate from the enzyme

(4) None of the above

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5	1. If a manufacturing company does no	at adhere to cGMP regulations:	
	(1) Any drug manufactured by such	company will be considered adulterated	
	(2) No action will be taken if the drug is safe		
	(3) Company will be closed instantly		
	(4) It means that necessarily there is		
52	2. Normality of concentrated <i>HCl</i> is app	proximately:	
	(1) 11.7 N	(2) 17 N	
	(3) 35 N	(4) 71 N	
53.	. The sample size in Meso analysis is :		
	(1) 0.1 - 0.01 g	(2) 0.01 - 0.001 g	
	(3) 0.001 - 0.0001 g	(4) < 0.0001 g	
54.	Precision of an analytical experiment	can be increased by minimization of:	
	(1) Personal errors	(2) Instrumental errors	
	(3) Indeterminate errors	(4) Determinate errors	
55.	Mohr's method is carried out at pH:		
	(1) 6-9	(2) 8-10	
	(3) 4-7	(4) 3-6	
56.	Process of conversion of aggregated p called:	recipitates into colloidal form during washing is	
	(1) Coagulation	(2) Peptisation	
	(3) Colloid formation	(4) None of these	
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57.	Calomel is a mixture of:	
	(1) Hg_2Cl_2 and KCl	(2) Hg_2Cl_2 , Hg and KCl
	(3) $HgCl_2$ and KCl	(4) $HgCl_2$, Hg and KCl
58.	The base value for a homoannular diene	is:
	(1) 215 nm	(2) 235 nm
	(3) 253 nm	(4) 207 nm
59.	The $n \to \pi^*$ transition undergoes	shift in a polar solvent.
	(1) Hypsochromic	(2) Hyperchromic
	(3) Bathochromic	(4) None
60.	Which of the following nucleus is <i>not</i> do	etected in NMR spectroscopy ?
	$(1)^{-1}H$ $(2)^{-12}C$	(3) ^{15}N (4) ^{19}F
61.	Coomb's test is for:	
	(1) Typhoid	(2) Syphillis
	(3) Yellow fever	(4) Antiglobulin
62.	Fragile heat sensitive equipments are ste	erilised by which method?
	(1) Gamma radiation	(2) Ethylene oxide
	(3) Chemical sterlisation	(4) None
63.	License for bonded and non-bonded lab	oratory is issued by:
	(1) Drug Inspector	(2) Excise Commissioner
	(3) Director of health services	(4) State Government
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64	64. Drugs and Cosmetics Act has been latest amended in the y	vear:
	(1) 2005 (2) 2014 (3) 2013	(4) 2015
65	65. Under DPCO-2013, how a ceiling price is calculated :	
	(1) Based on the simple averaging of the market primedicines having a market share of 1% and above, I Turnover (MAT).	
	(2) Based on the simple averaging of the market prices of having a market share of 1.5% and above, base Turnover (MAT).	
tage -	(3) Based on the simple averaging of the market primedicines having a market share of 2% and above, I Turnover (MAT).	
7838	(4) Based on the simple averaging of the market primedicines having a market share of 2.5% and above, Turnover (MAT).	
66.	66. Fluid energy mill works on principle of :	
10 10 1	(1) impact (2) compression	
	(3) impact and attrition (4) rotor and star	tor
67.	67. Which equipment is used for mixing immiscible liquids?	
	(1) Airjet mixer (2) Jet mixer	
	(3) Silverson mixer (4) Sigma mixer	
68.	68. The mechanism of intake of DNA fragments from the surricalled:	rounding medium by a cell is
	(1) Transformation (2) Transduction	
	(3) Conjugation (4) Both (1) and	(2)
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- 69. Which of the following techniques is generally used to produce transgenic animals?
 - (1) Processed RNA containing only exons are introduced into the embryo
 - (2) Entire foreign nucleus is introduced into the blastocyst stage enucleated embryo
 - (3) Desired DNA is microinjected into fertilised eggs followed by the implantation of the embryo in a foster mother
 - (4) c-DNA of the desired gene is introduced into animal embryos and implanted in the foster mother
- 70. What is meant by 'Organ culture'?
 - (1) Maintenance alive of a whole organ, after removal from the organism by partial immersion in a nutrient fluid
 - (2) Introduction of a new organ in an animal body with a view to create genetic mutation in the progenies of that animal
 - (3) Cultivation of organs in a laboratory through the synthesis of tissues
 - (4) The aspects of culture in community which are mainly dedicated by the need of a specified organ of the human body
- 71. Protoplasts can be produced from suspension cultures, callus tissues or intact tissues by enzymatic treatment with:
 - (1) cellulotyic enzymes
 - (2) pectolytic enzyme
 - (3) proteolytic enzyme
 - (4) both (1) and (2)

72. Match the phytoconstituent with the biosynthetic pathway by which it is biosynthesised:

Column-I	Column-II
(i) Fatty acids	(a) Acetate Mevalonate Pathway
(ii) Steroids	(b) Acetate Malonate Pathway
(iii) Flavonoids	(c) Photosynthesis
(iv) Sugars	(d) Shikimic Acid Pathway

(1)	: 0.	:: h.	:::	: 1
(1)	1-a,	п-о;	iii-c;	1V-0

(2) i-d: ii-a; iii-b; iv-c

(4) i-b; ii-a; iii-d; iv-c

73.	Which of the following methods is not used for extracting	y volatile oils from aromatic
	plants ?	

(1) Hydro-distillation

(2) Ecuelle

(3) Enfleurage

(4) Hot continuous Percolation

74. Which of the following is *not* used to determine the identity of crude drugs?

(1) Microscopic evaluation

(2) Phytochemical evaluation

(3) Acute toxicity evaluation

(4) Evaluation of physical parameters

75. Which of the followings belongs to tyrosine kinase family of receptors ?

(1) GABAA receptors

(2) Adrenergic receptors

(3) Insulin receptors

(4) Dopamine receptors

76. Nicotinic Receptors are blocked by:

(1) Atropine

(2) Curare

(3) Suxmethonium

(4) Acetylcholine esterase

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⁽³⁾ i-a; ii-d; iii-b; iv-c

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	and marasympathetic nervous system leads to.
77.	Stimulation of the parasympathetic nervous system leads to .

- (1) Constriction of pupils
- (2) Constriction of skin vessels
- (3) Constriction of gastrointestinal sphincters
- (4) Constriction of brain vessels

78. Which of the following are paired bones found in the cranium:

(1) Frontal and Parietal

- (2) Parietal and Maxillary
- (3) Frontal and Occipital
- (4) Parietal and Temporal

79. Indicate which of the following statements is *true*. Oil-soluble surfactants:

- (1) Have high HLB values.
- (2) Are hydrophilic.
- (3) Can be used as emulsifiers to produce water-in-oil emulsions.
- (4) Are efficient solubilising agents.

Which statement is correct?

- (1) Mainly acidic drug binds to albumin.
- (2) Mainly basic drug binds to albumin.
- (3) Acidic drug binds only to a-acid glycoprotein.
- (4) None of the above

81. Identify the *correct* sequence of acidity:

- (1) Phenol > Alcohol > Carboxylic acid > Alkane
- (2) Alcohol > Phenol > Carboxylic acid > Alkane
- (3) Carboxylic acid > Phenol > Alcohol > Alkane
- (4) Carboxylic acid > Alcohol > Phenol > Alkane

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02.	"substrate level" by which of the follow	CA cycle, 2 molecules of ATP can be formed at ving reaction?
	(1) Citric acid → Isocitric acid	
	(2) Isocitrate → Oxaloacetate	
	(3) Succinic acid → Fumarate	
	(4) Succinyl CoA → Succinic acid	
83.	In the treatment of myasthenia grav myashenic crisis and cholinergic crisis,	is, the best agent for distinguishing between given intravenously, is:
	(1) Pyridostigmine	(2) Edrophonium
	(3) Physostigmine	(4) Neostigmine
84.	A sample of a powder with true density have bulk volume of 80.33 cm ³ when putter the porosity.	ty of 3 g/cm ³ and weighing 100 g was found to blaced in a 100-ml graduated cylinder. Calculate
	(1) 0.58	(2) 0.41
	(3) 0.31	(4) 0.25
85.	Which of the following method is used	to obtain surface tension?
	(1) X-ray diffraction	(2) Karl Fischer method
	(3) Capillary rise method	(4) Sedimentation method
86.	Kinematic viscosity is the absolute viscosity temperature.	viscosity divided by the at specific
	(1) Weight of liquid	(2) Density of liquid
	(3) Unit time	(4) None of the above
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.=	Which of the following is <i>not</i> a primary amine?
87.	(2) 1-Butylamine
	(3) Diethylamine (4) Cyclohexylamine
88.	The migration of a group from carbon to electron-deficient oxygen is an example reaction.
	(1) Baeyer-Villiger rearrangements
	(2) Pinacole-Pinacolone rearrangements
	(3) Beckmann rearrangement
	(4) Benzillic acid rearrangement
89.	A mixture of amino acid can be separated by:
	(1) Sublimation (2) Chromatography
	(3) Distillation (4) None
90.	A meso compound:
	(1) contains a plane of symmetry
	(2) is optically inactive
	(3) is an achiral molecule that contains chirality center
	(4) is characterized by all of the above characteristics
91.	D and L are a pair of configuration.
	(1) Relative (2) Absolute
	(3) Cis-trans (4) Optical
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	-). ()

92.	As per Woodward-Hoffman rules for electrocyclic reaction, for a 4n system under thermal condition, rotation direction for bonding is :		
	(1) Con rotation	(2) Dis rotation	
	(3) Both Con and Dis rotations	(4) None of the above	
93.	. In which of the following structures, ge	eometrical isomer is <i>not</i> possible ?	
	(1) Ethene	(2) Propene	
	(3) 2-Pentene	(4) (1) and (2)	
94.	is the heterocyclic compound	d with five membered ring.	
	(1) Aziridine	(2) Azole	
	(3) Azoletine	(4) Azoline	
95.	Chemical nomenclature of procaine is:		
	(1) 2-Dimethylaminoethyl 4-aminoben	nzoate	
	(2) N, N-Diethyl-4-aminobenzoate		
	(3) 4-Aminobenzamidoethyl amine		
	(4) 4-Amino-2-diethylaminoethyl benz	zoate	
96.	B-lactamase inhibitor clavunic acid is:		
	(1) 1, 1-dioxo penicillanic acid		
	(2) Carbapenam		
	•		
	(3) Cepham		
	(4) 1-oxapenam structure, which has no		
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97.	Which of the following statement is true	ee?
	(1) Ampicillin is an antipyretic drug.	
	(2) Chloroquine is an antimalarial drug	5.
	(3) Amoxicillin is an antiepileptic drug	5.
	(4) Paracetamol is an antibiotic.	
98.	Dose dumping is a problem in the form	ulation of:
	(1) Compressed tablets	(2) Suppositories
	(3) Soft gel capsule	(4) Controlled release drug products
99.	No drug, regardless of its shelf life, car	be sold after:
	(1) 2 years	(2) 3 years
	(3) 5 years	(4) 7 years
100.	An unequal distribution of colour on the	e surface of the tablet is called:
	(1) Cracking	(2) Chipping
	(3) Picking	(4) Mottling

ANS	WER KEYS OF PHA	KIVIACEUTICAL SI	C C	FOR SESSION 2022-23	
Q. NO.	Α	В	C	D 3	
1	3	4	4		
2	4	2	1	1	
3	2	2	3	4	
4	1	2	2	2	
5	3	1	1	2	
6	2	3	1	3	
7	3	3	4	3	
8	1	1	3	1	
9	2	3	3	2	
10	4	1	2	4	
11	1	1	4	4	
12	1	3	4	2	
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Q. NO.	A		FOR SESSION 202	D
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