



# PHARMACY INDIA

## PRACTICE WORK SHEET - 14

Name of Candidate:-.....

Date:-.....

Mobile No.:-.....

College Name:-.....

Candidate Sign

### INSTRUCTIONS:-

1. The Questions Booklet contains 125 questions. Examinee is required to answer all 125 questions in the OMR Answer-Sheet and not in the questions Booklet. All questions carry equal marks.
2. Examine the Questions Booklet and OMR Answer-Sheet very carefully before you proceed. Faulty Questions Booklet due to missing or duplicate paper/question or having any other discrepancy should be immediately replaced.
3. Features:- (i) Each Worksheet Contain 125 Question (ii) Subject Wise Distribution (iii) According To Syllabus (iv) Designed By Team Of Experts

Invigilator Sign

WRONG METHODS

CORRECT METHODS



# PRACTICE WORK SHEET - 14

## INDIA'S 1<sup>ST</sup> OFFLINE TEST SERIES WITH DETAILED EXPLANATION

### FEATURES

- Each Worksheet Contain 125 Question
- Subject Wise Distribution
- According To Syllabus
- Designed By Team Of Experts



## PHARMACY INDIA

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## PHARMACEUTICS

- The Reynolds number is defined as
  - Measure of the ratio of inertial forces  $\rho V^2 / L$  to viscous forces  $\mu V / L^2$
  - Measure of the ratio of inertial forces  $\rho V^2 / L$  to Non viscous forces
  - Measure of the ratio of viscous forces  $\mu V / L^2$  to inertial forces  $\rho V^2 / L$
  - Measure of the ratio of non-viscous forces to inertial forces  $\rho V^2 / L$
- Which of the following equation is correct to determine the pH of weak base
  - $\text{pH} = \text{pK}_a + \log \frac{\text{ionized drug conc.}}{\text{unionized drug conc.}}$
  - $\text{pH} = \text{pK}_a + \log \frac{\text{unionized drug conc.}}{\text{ionized drug conc.}}$
  - $\text{pH} = \text{pK}_a - \log \frac{\text{ionized drug conc.}}{\text{unionized drug conc.}}$
  - $\text{pH} = \text{pK}_a + \log \frac{\text{unionized drug conc.}}{\text{ionized drug conc.}}$
- Which of the following is a propellant number of dichlorotetrafluoroethane
  - 114
  - 014
  - 124
  - 012
- Auristillae is the latin term for
  - Eye drop
  - Ear drop
  - Nasal drop
  - Spray solution
- DLVD theory is
 

[P] Derjaguin-Landau-Verwey-Overbeek theory

[Q] Used to explain double electric layer theory

[R] Used to explain stability ointments

[S] Used to explain Brownian movement of colloids

  - [P], [Q]
  - [Q], [R]
  - [R], [S]
  - [Q], [S]
- Identify the incorrect match of MOA of penetration enhancer
  - DMSO - Protein denaturation
  - Pyrrolidones - Alter solvent nature of membrane
  - Adapalene - Lipid fluidization
  - Pyrrolidones - Increase drug solubility & thermodynamic activity
- Which of the following is act as supercritical fluid
  - Nitrogen
  - Oxygen
  - Carbon-di-oxide
  - Helium
- Cam tracks are used to guide the movement of
  - Hopper
  - Dies
  - Punches
  - None of these
- Which of the following is not used as cosolvent in small volume parenteral
  - Glycerol
  - Ethanol
  - Benzyl alcohol
  - All of these
- Secobarbital is \_\_\_\_\_ drug
  - Schedule G
  - Schedule H
  - Schedule Q
  - Schedule X
- Which viscosity grade of Povidone is widely used as binder & tablet coating material
  - K-15
  - K-60
  - K-90
  - K-30
- Which is an opaquant - extender
  - Starch
  - MCC-102
  - Ac-Di-Sol
  - TiO<sub>2</sub>
- Green bones are used for the preparation of gelatin of the type
  - A
  - C
  - B
  - A and B
- The moisture content of the capsule shell is determined by
  - Toluene distillation method
  - Benzene distillation method
  - Phenol distillation method

71. Which one of the following is not a gene insertion technique into a eukaryotic

- (a) Electroporation cell
- (b) Iontophoresis
- (c) Shot gun sequencing
- (d) Microinjection

72. Which one of the following alkaloid contains isoquinoline nucleus

- (a) Quinine
- (b) Hyoscyamine
- (c) Piperine
- (d) Papaverine

73. Which is the most important vitamin required for tissue culture of plants

- (a) Thiamine
- (b) Riboflavin
- (c) Niacin
- (d) Folic acid

74. Cruciferous stomata is the characteristic features of

- (a) Datura
- (b) Colchicum
- (c) Lobelia
- (d) Senna

75. Which is known as "gunny-bag fibres"

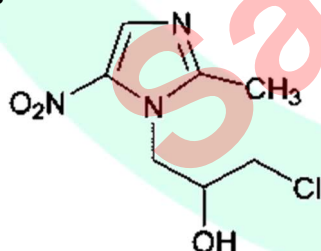
- (a) Cotton
- (b) Silk
- (c) Jute
- (d) Flax

76. The marine antibiotic compound is

- (a) Anthopleurins
- (b) Ciguatoxin
- (c) Thelphin
- (d) Cyclooudesmol

## PHARMACEUTICAL CHEMISTRY

77. The given structure shows is



- (a) Metronidazole
- (b) Tinidazole
- (c) Ornidazole
- (d) Secnidazole

78. IUPAC Name of Metronidazole is

- (a) 1-methyl-5-nitroimidazole-2-ethanol
- (b) 2-methyl-5-nitroimidazole-1-ethanol
- (c) 5-methyl-1-nitroimidazole-2-ethanol

(d) 1-methyl-2-nitroimidazole-5-ethanol

79. Azithromycin is semisynthetic derivative of erythromycin and it is synthesized by

- (a) Hofmann rearrangement
- (b) Beckmann rearrangement
- (c) Benzilic acid rearrangement
- (d) Wetting rearrangement

80. Perkin reaction is used for the synthesis of

- (a)  $\alpha$ ,  $\beta$ -unsaturated Aldehyde
- (b)  $\alpha$ ,  $\beta$ -unsaturated Acid
- (c)  $\alpha$ ,  $\beta$ -unsaturated Ester
- (d)  $\alpha$ ,  $\beta$ -unsaturated Ketone

81. Which of the following species is paramagnetic in nature

- (a) Free radical
- (b) Carbonium ion
- (c) Carbanion
- (d) Singlet carbene

82. The stereochemistry of morphine is

- (a) 5S, 6R, 9S, 13R, 14S
- (b) 5S, 6R, 9S - 13R, 14R
- (c) 5S, 6R, 9S, 13S, 14S
- (d) 5R, 6S, 9R, 13S, 14R

83. The correct order of basicity is

- [P] Pyrrole
- [R] Pyridine
- [Q] Indole
- [S] Piperidine
- (a) [P] > [Q] > [R] > [S]
- (b) [Q] > [P] > [R] > [S]
- (c) [R] > [P] > [Q] > [S]
- (d) [S] > [R] > [P] > [Q]

84. Rubreserine is a metabolic product of

- (a) Neostigmine
- (b) Pyridostigmine
- (c) Physostigmine
- (d) Rivastigmine

85. Acridine and xanthene rings are related to each other in that

- (a) Xanthene is oxygen isoster of acridine
- (b) Acridine is oxygen isoster of xanthene
- (c) Xanthene is nitrogen isoster of acridine
- (d) Xanthene is sulfur isoster of acridine

	t = time	$K = \frac{2.303}{t(a-b)} \log \frac{b(a-x)}{a(b-x)}$
Half life $T_{1/2} = \frac{A_0}{2K}$	Half life $T_{1/2} = \frac{0.693}{k}$	Half life $T_{1/2} = 1/ak$
shelf life $T_{90} = \frac{0.1 A_0}{K}$	shelf life $T_{90} = \frac{2.303}{k} \log \frac{C_0}{0.9 C_0}$	
Unit K= moles/liter/second	Unit K= sec <sup>-1</sup>	Unit K= l mole <sup>-1</sup> sec <sup>-1</sup>

**8. Ans (a)**

- A dipole moment is the product of the magnitude of the charge and the distance between the centres of the positive and negative charges. It is denoted by the Greek letter 'μ' Mathematically.

**Dipole Moment (μ) = Charge (Q) X distance of separation (r)**

- In CO<sub>2</sub> molecule the angle between O-C-O is 180°
- Although carbon dioxide has two polar C=O bonds, the two are pointed in geometrically opposite directions, canceling each other out and resulting in a molecule with no net dipole moment (m=0) and the molecule is linear symmetrical and does not exhibit dipole moment.

**9. Ans (c)**

Phase solubility analysis involves measurement of the solution concentration at several system compositions after equilibration at constant temperature (system composition is the amount of solid sample per unit weight of solvent).

- Phase solubility Analysis curve is a valuable tool employed for purity determination,
- The solubility technique can be modified to study the extent of non-covalent interaction between two solutes. This helps to determine the formation of complex.
- Although solid existing in different polymorphic form cannot be easily distinguished by phase solubility analysis, analysis in additional solvents is used to determine the existence of such a condition.

**10. Ans (b)**

- Ball mill is a type grinder which works on the principle of impact and attrition
- The size reduction is done by impact as the balls drop from near the top of the shell.

**SIZE REDUCTION MILLS AND THEIR VARIANTS**

MILL	VARIANTS
Cutter mill	Double runner disc mill, single runner disc mill
Roller mill	Multiple smooth rollers or corrugated, ribbed or saw-toothed rollers.
Hammer mill	Fitzpatrick comminuting machine, stokes tornado mill
Ball mill	Hardieng mill, continuous ball mill, vibrating ball mill
Fluid energy mill	Centrifugal - impact pulverizer
Pin mill	Mikro-ACM pulverizer mill



## 31. Ans (c)

- ✓ Non-ionic surfactants are least toxic surfactant to be used in ophthalmic formulation use of organic mercurial preservatives develops iatrogenic deposits in the crystalline lens, results in yellowish brown discoloration of the lens capsule. However, there is no impairment to vision.

32. Ans (d) **DISTILLATION METHODS AND ITS APPLICATIONS:**

Distillation methods	Applications
<b>Flash distillation</b>	Separating components - which boil at widely different temperatures, in petroleum industry for refining crude oil.
<b>Fractional distillation</b>	Separation of miscible liquids such as acetone and water, chloroform, and benzene.
<b>Steam distillation</b>	Separation of immiscible liquids (i.e. toluene and water), extraction of volatile oil, purification of liquid with high boiling point (i.e. essential oil of almond),
<b>Molecular distillation</b>	Purification and separation of chemicals of low vapour pressure, separation of vitamin A and E from fish liver oil and other vegetables.

33. Ans (d) **LAW REGARDING ABORTION**

<b>Humanitarian aspects</b>	Pregnancy arises due to sex crime, intercourse with a lunatic woman
<b>Health aspects</b>	Pregnancy gave risk to life or physical or mental health of a woman
<b>Eugenic aspects</b>	Where child to be born is likely to have deformalities and/or serious defects

No pregnancy shall be terminated without the consent of pregnant woman expect

- The pregnant woman is less than 18 years in age
- The pregnant woman lunatic although she has attained the age 18.

34. Ans (b) **According to Section 127 in The Drugs and Cosmetics Rules, 1945****List of colours permitted to be used in drugs. -**

- No drug shall contain a colour other than that specified below:
- Natural Colors Annatto Carotene Chlorophyll Cochineal Curcumin Red Oxide of iron Yele Oxide of iron, Titanium Oxide and Black Oxide of Iron
- Artificial Colors Caramel 4[Riboflavin]
- Coal Tar Colors

## 35. Ans (b)

- ✓ The first-order process is also called as monoexponential rate process.
- ✓ A first-order process is characterized by logarithmic or exponential kinetic constant fraction of drug undergoes reaction per unit time.
- ✓ A semilogarithmic plot yield a straight line with slope=  $-k/2.303$  and y-intercept= $\log C_0$

- ACE inhibitors, nitrates, hydralazine can be effective while Calcium channel blockers are not useful.

#### 64. Ans (a)

- Buprenorphine is a partial agonist on  $\mu$  receptors and antagonist at kappa receptors.
- It is less liable to cause dysphoria than pentazocine but more liable to cause respiratory depression.
- It has a long duration of action. Its abuse liability is probably less than that of Morphine. Buprenorphine is used for the management of opioid dependence.

#### 65. Ans (a)

- Warfarin, dicumarol and phenindione can cross the placenta but is not secreted in the milk. It is contraindicated during pregnancy.
- However, heparin is safer and drug of choice in pregnancy.

#### 66. Ans (c) GASTRIC ACID SECRETION INHIBITORS

SUBCLASS	DRUGS
<b>Proton pump inhibitors</b>	Omeprazole, Lansoprazole, Pantoprazole, Rabeprazole, Esomeprazole, Dexrabeprazole
<b>H<sub>2</sub> Receptor antagonist</b>	Cimetidine, Ranitidine, Famotidine, Roxatidine, Loxatidine
<b>Anticholinergic</b>	Pirenzepine, Telenzepine, Propantheline, Oxyphenonium
<b>Prostaglandin analogue</b>	Misoprostol, Enprostil, Rioprostil

#### 67. Ans (d) PYRETHRUM

- **Synonyms:** Natural pyrethrum, insect flowers
- **Biological source:** Pyrethrum consists of more or less fully expanded flower heads of *Chrysanthemum cinerarifolium* (Family: Compositae)
- **Chief cultivation area:** It is mainly grown in Kenya, Tanzania, Ecuador, Japan, Uganda, Rwanda. Recently Australia has become the world's second largest producer after Kenya.

#### 68. Ans (a)

- In *Cassia angustifolia*, Short term drought increased concentration of sennoside A+B (% dw).
- After morphological changes induced by drought had occurred. long-drought did not affect concentration of sennoside A + B, but extreme loss of leaf biomass caused sennoside yield per plant to fall by 78 percent.
- Application of foliar nitrogen increased the total sennoside content of A+ B per plant by 140 percent when the plants were not stressed with water but no effect of foliar nitrogen application was detected in extreme droughts.

#### 69. Ans (b) EUROPEAN SQUILL (SCILLA)

European squill two varieties-White squill, Red squill.

**110. Ans (d) SPONTANEOUS CHANGES**

- A spontaneous change is one which proceeds on its own. (This is an energetic not kinetic statement-more later).
- Spontaneous processes lead to lower energy and increased stability.
- For a spontaneous change  $\Delta S_{\text{total}}$  must be positive ie the system and its environment considered together must increase in entropy.

$$S_{\text{total}} = S_{\text{system}} + S_{\text{surroundings}}$$

- The effect on the surroundings and their entropy changes can drive endothermic reactions to take place.

When  $\Delta S = +ve$  the change is spontaneous.

- The conditions for spontaneity and equilibrium is listed below

CONDITION	IRREVERSIBLE PROCESS	REVERSIBLE PROCESS
At Constant E, V	$ds > 0$	$dS = 0$
At Constant S, V	$-dE > 0$	$-dE = 0$
At Constant S, P	$dH < 0$	$dH = 0$
At Constant P, T	$dG < 0$	$dG = 0$

**111. Ans (c)**

- Van't Hoff equation for solutions of electrolytes assumes the form  

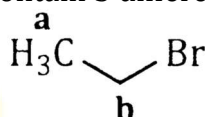
$$\pi V = inRT$$
- Since electrolytes are ionized in solution, total number of particles increases as compared to the number of particles if no ionization had taken place.
- The osmotic pressure of solution being proportional to the number of particles in solution, we can write as soon as the solute molecules increases the osmotic pressure of solution increase.

**112. Ans (c)**

- The interaction between the spin of the neighbouring nuclei in a molecule may cause the splitting of the lines in the NMR spectrum. This is known as spin-spin coupling when occurs through bond by means of a slight unpairing of the bonding electron.
- Splitting of a proton signal is caused only by neighboring or vicinal proton. Thus spin-spin splitting occurs only between nuclei chemical shifts.

**113. Ans (c)**

- No of signal depend upon the number of different set of equivalent proton in the molecule. A set of equivalent proton gives the signal.
- The given molecule Ethyl bromide contain 3 different type of proton as shown below.



- Thus 2 Number of H-NMR signal shall be given by the compound.

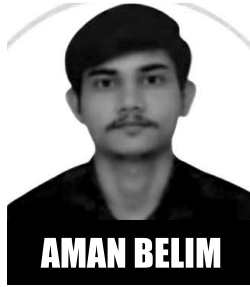
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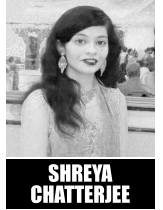
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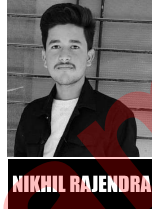
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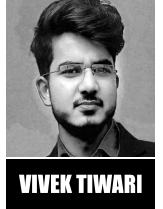
**AIR-595**



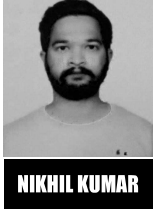
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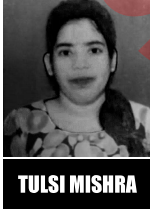
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