B. Pharmacy 3rd Semester Question Paper 2018-2019

Odd Semester Examination 2018-19

B.Pharma. (SEMESTER-III)

27/4/19

(New Syllabus)

PHARMACUTICAL ORGANIC CHEMISTRY-II

Time: 03:00 Hours

Max Marks :75

Note : Attempt the following.

1.   Attempt all questions :

[10x2=20]

(a)   Write the formula for acid value...............iodine value...............

(b)   Structure and uses of DDT.

(c)   Discuss the qualitative test of phenol.

(d)   Benzene has three double bonds but it behaves like saturated compound, explain.

(e)   Write down the preparation of cyclopropane.

(f)   Structure and medicinal uses of phenanthrene.

(g)   Explain Huckel Rule.

(h)   Limitation of Friedel-craft reaction.

(i)   ....titration are carried out for estimation of drugs containing primary amino group.

(j)   Cyclopropane when reacted with bromine it gives ....

2. Long answer type (Attempt any **two**) : [10×2=20]

   (a) Write down the synthesis and reactions of any two-polynuclear hydrocarbon.

   (b) What are aromatic amines? Discuss its chemical properties with mechanism.

   (c) DiscussStabilities of cycloalkanes. Write method of preparation of cycloalkanes. Explain Baeyer's strain theory in detail.

3. Short answer type (Attempt any **seven**) : [5x7=35]

   (a) Aromatic character of benzene.

   (b) Acidity of phenol.

   (c) Effect of substitution on basicity of amines.

   (d) Reactions of fatty acids.

   (e) What is aromaticity? Explain Huckel rule giving suitable examples.

   (f) Reactions of cyclobutane.

   (g) Sachse Mohr's theory.

   (h) Significance and principle involved in determination of saponification value.

   (i) Preparation and reactions of aromatic amines.

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BP-301T/1360 (2)

BP-302T

Odd Semester Examination 2017-18

B.Pharma. (SEMESTER-III)

(New Syllabus)
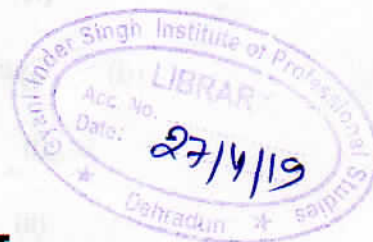
PHYSICAL PHARMACEUTICS-I

Time: 03:00 Hours

Max Marks :75

Note: Attempt the following.

Q1.   Attempt all questions.Multiple choice question: (1×20=20)

(a)   Extent of binding of drugs with various plasma proteins is

   (i)   Lipoproteins> Alpha one acid glycoproteins > Albumin> Globulins

   (ii)   Albumin > Alpha one acid glycoproteins > lipoproteins>Globulins

   (iii)   Alpha one acid glycoproteins > Albumin> Globulins> lipoprotein

   (iv)   None of the above

(b)   From thermodynamic point of view one needs to consider which form of compound to check its solubility :

   (i)   Most stable form of crystal

   (ii)   Metastable form of crystal

   (iii)   Both (i) and (ii)

   (iv)   None of the above

(c)   Constitutive property of substances is

   (i)   Arrangement of atoms in a molecule

   (ii)   Sum of all the individual property of atoms in a molecule

(iii)   Both (i) and (ii)

(iv)   None of the above

(d)   Cyclodextrin is an example of which type of complex

(i)   Metal complex

(ii)   Monomolecular occlusion complex

(iii)   Organic molecular complex

(iv)   None of the above

(e)   EDTA is a type of ligand

(i)   Unidentate

(ii)   Bidentate

(iii)   Tridentatate

(iv)   Hexadentate

(f)   Liquefaction of gases can be achieved by

(i)   Increasing temperature and pressure

(ii)   Decreasing temperature and pressure

(iii)   Increasing pressure and decreasing temperature

(iv)   Decreasing pressure and increasing temperature

(g)   Spreading of oil in water occurs when

(i)   Work of adhesion is equal to Work of cohesion

(ii)   Work of cohesion is greater than work of adhesion

(iii)   Work of adhesion is greater than work of cohesion

(iv)   None of the above options.

(2)

(h)   Charle's law of gases is :

     (i)   Volume is directly proportional to temperature

     (ii)   Volume is equal to temperature

     (iii)   Volume is inversely proportional to temperature

     (iv)   None of the above

(i)   Adsorption is a surface phenomenon which increases with :

     (i)   Increase in surface free energy

     (ii)   Decrease in surface free energy

     (ii)   Both (i) and (ii)

     (iv)   None of the above

(j)   Range of HLB value of O/W emulsifying agents is :

     (i)   0-3

     (ii)   3-6

     (iii)   9-12

     (iv)   8-16

(k)   Instrument used to measure relative humidity is :

     (i)   Stalagmometer

     (ii)   Pycnometer

     (iii)   Psychrometer

     (iv)   Venturimeter

(l) Red blood cells exposed to hypotonic solution will

    (i)   Remain same

    (ii)   Swell

    (iii)   Shrink

    (iv)   None of the above

(m) Name of the technique to determine complexationis :

    (i)   Continuous variation

    (ii)   Capillary rise method

    (iii)   Optical microscopy

    (iv)   None of the above

(n) Smectic crystal molecule are mobile in :

    (i)   Two directions

    (ii)   One direction

    (iii)   Three direction

    (iv)   None of the above

(o) A drop of water on teflon possess contact angle of :

    (i) $0°$

    (ii) $180°$

    (iii) $109°$

    (iv) $90°$

(p) Elevation in boiling point is :

    (i)   Additive property

    (ii)   Constitutive property

    (iii)   Both (i) and (ii)

    (iv)   None of the above
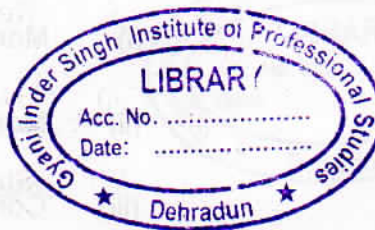
(q) Order for dissolution of different solid forms of drug is :

    (i)   Stable>Amorphous>Metastable

    (ii)   Metastable> Stable > Amorphous

    (iii)   Amorphous > Metastable > Stable

    (iv)   Amorphous>Stable >Metastable

(r) Surfactant are used to aid wetting of powders, because they are capable of :

    (i)   Lowering the contact angle between solid and liquids

    (ii)   Permit intimate contact by displacing air

    (iii)   Reduces interfacial tension

    (iv)   All of the above

(s) 0.1 N NaOH solution is prepared by dissolving :

    (i)   40gramsNaOH in 1litres of solvent

    (ii)   80 grams NaOH in 1 litres of solvent

    (iii)   4gramsNaOH in 1litres of solvent

    (iv)   None of the above

(t)   As the pKa of an acid increases the acid will be

    (i)   More strong

    (ii)   More weaker

    (iii)   Converted to basic solution

    (iv)   Converted to neutral solution.

Q2.   Long answer type (Attempt any **two**) :   (10×2=20)

(a)   Explain in detail about polymorphism and pseudo polymorphism by giving suitable examples. What is the significance of polymorphism as one of the important physicochemical parameter.   (6 + 4)

(b)   What is Nernst's partition law? Derive the equation of this law by giving mathematical derivation and write in detail about the significance and limitations of this law.   (2 + 4 + 4)

(c)   What is complexation? Explain in detail about kinetics of protein binding and various applications of complexation in pharmacy.   (2 + 4 + 4)

Q3.   Short answer type (Attempt any **seven**) :   (5×7=35)

(a)   What is dielectric constant? What is the significance of dielectric constant?   (5)

(b)   What is colligative property? Enlist different types of colligative properties and explain in detail about Roult's law and its deviations.   (1 + 1 + 3)

(c)   Define the term solubility and the factors affecting solubility.   (2 + 3)

(d)   Enlist various methods of determination of complex formation.Write in detail about distribution method of complexation.   (1 + 4)

(e) Write note on any **two** of the following: (2.5×2)

(i)   Optical Rotation

(ii) Dipole moment

(iii) Buffers in pharmaceutical and biological systems,

(iv) Vapour pressure.
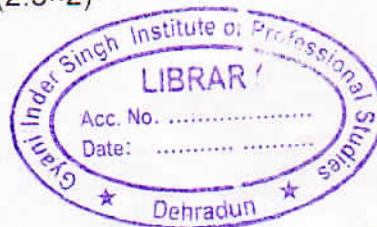
(f)   What is surface tension? Discuss the factors affecting surface tension.

(1 + 4)

(g)   Define states of matter. With the help of suitable example explain partial
      miscibility of liquids.   (1 + 4)

(h)   Write in detail about factors which influence the solubility of drugs.   (5)

(I)   Write a note on buffers in pharmaceutical and biological systems.   (5)

      Define the term solubility and the factors affecting solubility.

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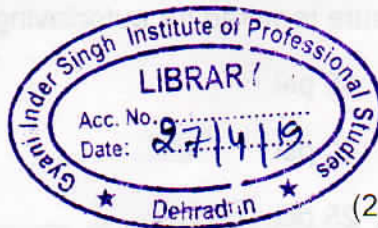**BP-303T**   **1134**

Odd Semester Examination 2018-19

B.PHARMA. (SEMESTER-III)

(New Syllabus)

PHARMACEUTICAL MICROBIOLOGY

Time: 03:00 Hours   Max Marks : 75

Note : Attempt the following.

Q1.   Attempt **all** questions: (2X10=20 marks)

(a)   Biological indicator used for dry heat sterilization is _____.

    (i)   B. subtilis

    (ii)   E. coil

    (iii)   S. aureus

    (iv)   P. aeroginosa

(b)   Primary stain used in Gram's staining is _____.

    (i)   Crystal violet

    (ii)   Methylene blue

    (iii)   Safranine

    (iv)   Malachite green

(c)   70s ribosome is present in _____.

    (i)   Eukaryotes

    (ii)   Prokaryotes

    (iii)   Both

    (iv)   None of the above

BP-303T/1360   (1)   [P.T.O.]

(d) Time in minutes at a given temperature which kills 90% of viable microbes is

_____ .

    (i)   D- value

    (ii)   Z- value

    (iii)   F- value

    (iv)   Fo – value

(e) Pressure required for autoclaving is _____ .

    (i)   15 psi

    (ii)   20 psi

    (iii)   25 psi

    (iv)   30 psi

(g) Disc Diffusion method is used for microbiological assay of _____ .

    (i)   Vitamins

    (ii)   Antibiotics

    (iii)   Amino acids

    (iv)   Growth factors

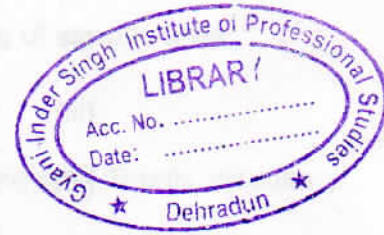(h) Indole production test is used for the identification of _____ .

    (i)   Bacteria

    (ii)   Fungi

    (iii)   Virus

    (iv)   Rickettsia

(i) 0.22 μm- 0.45 μm is the pore size of _____ filter.

    (i)   HEPA

    (ii)   Seitz

    (iii)   Membrane

    (iv)   Berkefield

(l)   MIC is determined in _____.

    (i)   Tube assay method

    (ii)   Cylindrical plate method

    (iii)   DOP test

    (iv)   Preservation efficacy

(k)   Phenol coefficient is determined for the evaluation of _____.

    (i)   Disinfectant

    (ii)   Herbal products

    (iii)   Food products

    (iv)   All of the above

(m)   Bacteria which can survive in presence of oxygen but have optimum growth in absence of oxygen are known as _____ anaerobes.

    (i)   Facultative

    (ii)   Obligate

    (iii)   Microaerophile

    (iv)   None of the above

(n)   In Gram's staining, Iodine is used as _____.

    (i)   Mordant stain

    (ii)   Counter's stain

    (iii)   Decoloriser

    (iv)   Primary stain

(o) .   Hanging drop method indicates the following about the cells :

    (i)   Shape and size

    (ii)   Motility

    (iii)   Arrangement

    (iv)   All of the above   .

(p) For dry heat sterilization, holding time is :

   (i)   160° C for 1 hour

   (ii) 140° C for 3 hours

   (iii) 150° C for 3 hours

   (iv) 160° for 2 hours

(q) Match the following :   [1X4=4]

   (i)   DOP smoke test   (a) Radiation sterlization

   (ii) Bubble point pressure test (b) Laminar air flow

   (iii) Dosimetere   (c) Membrane filter

   (iv) Royce Sachet   (d) Gaesous sterilization

(r) In lag phase of bacterial growth curve, the bacteria is in dormant
     state.   (True/False)   [1]

(s) Staphylococcus aureus is used as test organism in determining Rideal Walker
     Coefficient.   (True/False) [1]

Q2. Long answer type (Attempt any **two**) :   (10×2=20 marks)

(a) Write a detailed note on identification of bacteria using staining techniques and
     biochemical tests.

(b) Discuss the principle and methods used for microbiological assay of antibiotics,
     vitamins and amino acids.

(c) Define disinfection and antisepsis. Give a detail description of various evaluation
   methods of disinfectants and antiseptics.

Q3. Short answer type (Attempt any **seven**) :   (7×5=35 marks)

(a) Define microbiology and discuss the scope of microbiology in various sectors.

(b) Briefly describe about various sterility indicators.

(c) Enlist various types of spoilage and factors affecting the microbial spoilage of
     pharmaceutical products.

(d) Define primary, established and transformed cell cultures. Briefly describe various applications of cell culture in pharmaceutical industry and research.

(e) Write a short note on laminar flow equipment and designing of aseptic area.

(f) Discuss the test for sterility as per I.P.

(g) What are the various physical parameters for bacterial growth? Briefly discuss bacterial growth curve.

(h) Give complete classification of bacteria, virus and fungi.

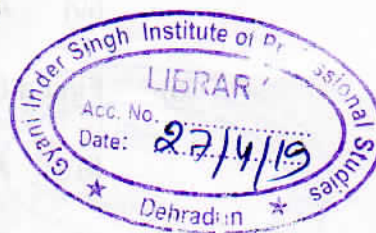(i) Differentiate between aseptic area and clean area. Give a brief note on clean area classification.

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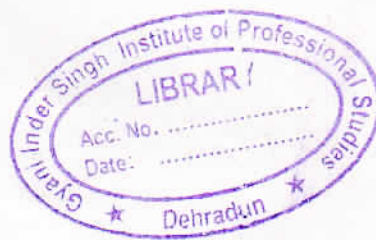
Odd Semester Examination 2018-19

B. PHARM.(SEMESTER-III)

(New Syllabus)

PHARMACEUTICAL ENGINEERING

Time: 03:00 Hours   **Max Marks :75**

Note : Attempt the following.

1.   Attempt all questions: [2×10=20]

    (a)   Special methods of Drying do not include.

        (i)   Roller dryer

        (ii)   Freeze dryer

        (iii)   Drumdryer

        (iv)   Tray dryer

    (b)   Which is not a type of centrifuge?

        (i)   Swing –out arm type

        (ii)   Angle type

        (iii)   Streamline

        (iv)   Perforated bowl type

    (c)   The mode of motion in size separation methods :

        (i)   Agitation

        (ii)   Brushing

(iii) Centrifugal force

(iv) All of them

(d) Find a factor which is not influencing corrosion.

(i) Acidity of the solution

(ii) Temperature

(iii) Melting point of metal

(iv) Oxidizing agent

(e) Choose the option, which is not a type of valve, used to control the flow of fluids.

(i) Globe valves

(ii) Gate Valve

(iii) Plug Cocks

(iv) Close nipple

(f) The metabolic activity of microorganisms either directly or indirectly causes deterioration of a metal is known as.........

(i) Rusting

(ii) Biological corrosion

(iii) Combating corrosion

(iv) Localized corrosion

(g) The centrifugal effect is

(i) Ratio of the centrifugal force and gravitational force

(ii) Sum of the centrifugal force and gravitational force

(iii) Product of the centrifugal force and gravitational force

(iv) None of the above

(h) Choose the type of fluid flow.

(i) Critical velocity

(ii) Turbulent

(iii) Packed column

(iv) Viscosity

(i) Vapor head deflector found in ....

(i) Basket type vertical tub evaporator

(ii) Long tube vertical evaporator

(iii) Horizontal tube evaporator

(iv) Short tube vertical evaporator

(j) Which one is not an example of size reduction equipment?

(i) Hammer mill

(ii) Cage mill

(iii) Pin mill

(iv) Shaking screen

(k) Find the type of check valve used in transportation of fluid.

(i) Air lift pump

(ii) Foot piece air lift pump

(iii) Ball check

(iv) Piston pump

(l)   One is not the mode of heat transfer.

    (i)   Conduction

    (ii)   Convection

    (iii)   Infra-Red

    (iv)   Radiation
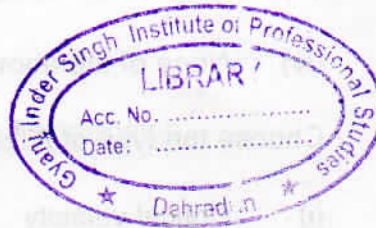
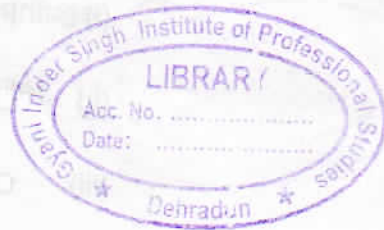(m)   Which value of Reynold's number present laminar or viscous flow?

    (i)   Re ≤ 2100

    (ii)   Re 2100-4000

    (iii)   Re ≥ 4000

    (iv)   None

(n)   Poise is the unit of ....

    (i)   Rate of Shear

    (ii)   Viscosity

    (iii)   Flow of Fluid

    (iv)   Heat transfer

(o)   Choose right one which is not the type of filter media in given options.

    (i)   Cotton Wool

    (ii)   Sand

    (iii)   asbestos

    (iv)   Talc

(p)   All vessels used in the Injection and syrup preparation made up of ....

(i)   Copper

(ii)   Nickel

(iii)   Stainless steel

(iv)   Aluminium

(q)   It is defined as average velocity of any fluid at which viscous flow change into turbulent flow.

(i)   Fluid Dynamics

(ii)   Reynold's Number

(iii)   Critical Velocity

(iv)   Turbulent flow

(r)   Non-metal used as material of plant constructions is ......

(i)   Carbon and Graphite

(ii)   Porcelain and stoneware

(iii)   Wood

(iv)   All of above

(s)   This is a type of plastic ....

(i)   Thermosetting

(ii)   Rayon

(iii)   Lime stone

(iv)   None of these

(t)   The three dimensional arrangement of particles in a crystal is known as...

    (i)   Faces

    (ii)   Lattice

    (iii)   Crystal

    (iv)   None of these
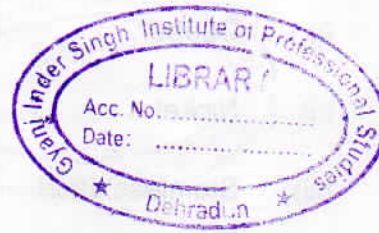
2.   Long Answer Type (Attempt **Any Two**)   [10×2=20]

(a)   Define the term evaporation. Discuss factors affecting evaporation. Write with diagram advantages, disadvantages and application of multiple effect evaporator.

(b)   Draw a well labeled diagram, give principle, construction and working of Plate and frame filter.

(c)   Discuss principle, construction and working of Freeze dryer. How it is useful for heat sensitive material?

3.   Short Answer Type (Attempt **Any Seven**)   [7×5=35]

(a)   What are the advantages and disadvantages of ball mill over the other size reduction machinery?

(b)   Give the principal and working of Swenson-walker crystallizer.

(c)   Give Principle, construction and working of climbing film evaporator.

(d)   Classify screen equipments for size separation. Give one example of each.

(e)   Derive and explain Bernoulli's theorem.

(f)   Compare the specific characteristic and application of the different kinds of mixing impellers employed for liquid-liquid and gas-liquid mixing.

(g)   Discuss various types of corrosion and their prevention.

(h)   Give principle, construction and working of Super-centrifuge.

(i)   Discuss construction, working and principle of Meta filter.

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