

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

PAPER – I

RESEARCH METHODOLOGY

Q.P. Code: 7001

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. What is grant writing? Enumerate the various government and non-government agencies / organizations, which provide research grant. Discuss the steps of writing the research protocol for grant. (2+5+13)
2. Classify study designs. Describe in detail different types of analytical study designs. (5+15)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Write a note on redundant publications with suitable examples.
4. Describe violation of publication ethics in research publication with suitable examples.
5. Describe the methodology – consistency with objectives and expected outcome with suitable example.
6. What is meta-analysis? Describe the steps of meta analysis.
7. Write a note on important databases used for literature search.
8. Define FINER in thesis writing with suitable example.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF MEDICINE
PAPER – II**

Q.P. Code: B24101

Reg.No: DO1223020

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Discuss types of ART regimens. Describe the mechanism of action, side effects and management of side effects of Antiretroviral therapy (ART) drugs. (10+10)
2. Discuss the challenges in HIV treatment, pertaining to adherence to treatment with focus on socio-economic and cultural barriers. (10+10)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Describe the biomarkers for HIV progression.
4. Discuss the National AIDS Control Organization guidelines for HIV treatment.
5. Discuss the Ethical issues in AI and machine learning in public health.
6. Describe the Methods of detection and monitoring of drug resistance in HIV
7. Describe the application of machine learning in HIV.
8. Describe the sources of data, data cleaning and preprocessing techniques for HIV research.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

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**FACULTY OF MEDICINE
PAPER – II**

Q.P. Code: B24102

Reg.No: DO1223021

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Define screening. Discuss the principles of screening. Discuss the various methods of screening available for women with high risk for developing breast cancer.
2. Discuss the current guidelines for screening for breast cancer with evidence. Add a note on the advantages and disadvantages of screening for breast cancer.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Discuss the risk factors associated with the development of breast cancer.
4. Enumerate the syndromes associated with breast cancer. Discuss BRCA1 & BRCA2 in detail.
5. Comparison between digital mammography and breast tomosynthesis.
6. Discuss role of MRI breast in the current scenario.
7. Describe the features of fibroadenoma, fibrocystic disease, ductal carcinoma in-situ and invasive ductal carcinoma seen on mammography
8. Write a note on various types of calcifications seen on mammography and their clinical significance.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF DENTISTRY
PAPER – II**

Q.P. Code: B24201

Reg.No: DO1223022

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Discuss Carcinogenesis with emphasis on oral carcinogenesis. Add a note on progression of oral pre-cancer to oral cancer. (10+10)
2. Describe structure of salivary glands. Discuss composition and function of saliva. Discuss the role of saliva as a diagnostic tool with current trends in liquid biopsy (5+5+10)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Define and classify oral potentially malignant disorders. Discuss etiopathogenesis and clinical features of oral submucous fibrosis. (3+5+2)
4. Define oral squamous cell carcinoma. Describe its clinical and histopathological features. Add a note on its management. (2+3+3+2)
5. Discuss hallmarks of cancer.
6. Discuss recent advances in diagnosis of oral pre-cancer and cancer. Add a note on its application and future scope.
7. Describe in detail oncogenes and proto-oncogenes.
8. Discuss current trends in diagnostic pathology with special emphasis on Raman Spectroscopy.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF DENTISTRY
PAPER – II**

Q.P. Code: B24202

Reg.No: DO1223023

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Discuss theories of carcinogenesis and write in detail about basic concepts of molecular carcinogenesis.
2. Write in detail Pharmacological actions of Cytisine, bioactive compounds in Cytisine and describe anti-tumor activities of Cytisine.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Discuss Reactive oxygen species.
4. Discuss in detail cascades of Apoptosis.
5. Differentiate Lipophilic and hydrophilic drugs. Add a note on transbuccal formulations and its advantages.
6. What are Human cancer cell lines? What are the different means of creating cell lines?
7. Discuss problems encountered in Cell line Authentication.
8. Discuss Anti-cancer evaluation techniques. Add a note on MTT assay.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF DENTISTRY
PAPER – II**

Q.P. Code: B24203

Reg.No: DO1223024

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Define and classify behaviour management. What role does audio analgesia play in managing children's behaviour during dental procedures? (5+5+10)
2. Define early childhood caries. Classify early childhood caries. Write in detail the etiology and management of early childhood caries. (5+5+10)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Define pulpectomy. Enumerate the indications and contraindications for pulpectomy. Write a note on obturating materials used for primary teeth.
4. What is fluoride toxicity? Discuss the classification and management of acute fluoride toxicity.
5. Discuss the management of child with learning disability in Paediatric dentistry.
6. Define Anticipatory guidance. Write in detail the importance of anticipatory guidance as primary preventive measure.
7. Discuss the aesthetic restoration of primary anterior teeth in paediatric dentistry.
8. Discuss the transition of occlusion from primary dentition to permanent dentition. How does it impact the development of child's oral health?

PRE Ph.D. EXAMINATION – OCTOBER 2024

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**FACULTY OF AYURVEDA
PAPER – II**

Q.P. Code: B24401

Reg.No: DO1223025

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Explain briefly about clinical drug research as per Good Clinical Practice (GCP) guidelines.
2. Enumerate Asthavidhavirya's and write their clinical importance and research updates.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Explain methods used for plant identification in veda, samhita and nighantu period.
4. Explain the role of microscopic evaluation in crude drug analysis.
5. Define Karma. Describe Rechana and Bhedana karma's with their mode of action with suitable examples
6. Write about Rasopalabधि and describe Rasa Nirdhara through taste threshold method.
7. Explain inter relationship between Rasadi factor.
8. Write about assessment of vipaka. Write differences between rasa and vipaka.

PRE Ph.D. EXAMINATION – OCTOBER 2024

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Max. Marks: 100

**FACULTY OF AYURVEDA
PAPER – II**

Q.P. Code: B24402

Reg.No: DO1223026

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. What is meant by Avartana? Explain Sneha kalpa karmukata. Write in detail about pharmacokinetics and pharmacodynamics of Sneha kalpana
2. What is meant by Stability study? Explain the need of ICH guidelines for stability study. Write in detail about ambient, controlled and accelerated studies.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Define Liniment. Mention which are the tests applied for the quality control used for the liniment.
4. Explain in detail about various models used for the Anti-inflammatory studies.
5. Write in detail about the general quality control parameters used for Semi-solid dosage forms.
6. Write the ingredients, method of preparation, precautions and uses of Kottamchukkaaditaila
7. Write the definition of additives and excipient's. Write their role in formulation preparation
8. Write in detail about need of Toxicity study and Efficacy study.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF AYURVEDA
PAPER – II**

Q.P. Code: B24403

Reg.No: DO1223027

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Critically analysenidana, samprapti, manifestations, upashaya and sadhyasadyata of Sandhigatavata (3+5+5+3+4)
2. Elaborate risk factors, pathophysiology, diagnostic criteria and clinical features of Osteoarthritis (5+5+5+5)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Discuss utility of various imaging modalities in knee Osteoarthritis
4. Explain the methods of Rogipareeksha and elaborate their utility in context of Sandhigatavata (4+6)
5. Enlist types of joints. Explain Knee joint anatomy in detail (3+7)
6. Elaborate diseases of knee joint. Explain the ligament injuries related to knee joint (5+5)
7. Explain chikitsa sutra and Critically appraise the shaman chikitsa of Sandhigatavata (4+6)
8. Explain haematological and serological investigations related to knee arthritis. (5+5)

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF AYURVEDA
PAPER – II**

Q.P. Code: B24404

Reg.No: DO1223028

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Explain nidana, samprapti, manifestations, upashaya and sadhyasadyata of Kustha. (3+5+5+3+4)
2. Elaborate risk factors, pathophysiology, clinical features and management of Psoriasis. (5+5+5+5)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Discuss utility of various investigations in diagnosis of Psoriasis.
4. Define Psoriasis and compare it with various Ayurveda diseases. (4+6)
5. Write a note on Kusthachikitsasootra and explain KusthaChikitsa in detail. (3+7)
6. Elaborate Rasayanachikitsa and pathayapathya in management of kustha. (5+5)
7. Explain dashavidhapareekshabhavas in patients of Kustha.
8. Explain research updates in the understanding and management of Kushta. (5+5)

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF AYURVEDA
PAPER – II**

Q.P. Code: B24405

Reg.No: DO1223029

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Explain briefly about clinical drug research as per Good Clinical Practice (GCP) guidelines.
2. Enumerate Asthavidhavirya's and write their clinical importance and research updates.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Explain methods used for plant identification in veda, samhita and nighantu period.
4. Explain the role of microscopic evaluation in crude drug analysis.
5. Define Karma. Describe Rechana and Bhedana karma's with their mode of action with suitable examples
6. Write about Rasopalabधि and describe Rasa Nirdhara through taste threshold method.
7. Explain inter relationship between Rasadi factor.
8. Write about assessment of vipaka. Write differences between rasa and vipaka.

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FACULTY OF AYURVEDA

PAPER – II

Q.P. Code: B24406

Reg.No: DO1223030

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Elaborate stage-wise physiology of Auditory perception
2. Elaborate procedure of Karnapoorna as per SOP

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Discuss various aetio-pathological causes of Otomycosis
4. What is Arka? Write the method of preparation of Arka
5. Discuss & critically analyse number of KarnaRogas according to various authors
6. Discuss various diagnostic methods in the Otomycosis and their integrity in clinical research
7. Critically analyse the classical line of management of Otomycosis in contemporary medicine.
8. Write a critical analysis of Arka formulations. How to incorporate that in PanchavidhaKashayaKalpana and discuss add-on benefits of Arka formulations over the other pharmaceutical preparations.

KLE ACADEMY OF HIGHER EDUCATION AND RESEARCH, BELAGAVI.

(Declared as Deemed-to-be-University u/s 3 & 12B of the UGC Act, 1956)

Accredited A⁺ Grade by NAAC (3rd Cycle)

Placed in 'A' Category by MoE (GoI)

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF AYURVEDA

PAPER – II

Q.P. Code: B24407

Reg.No: DO1223031

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Define Bronchial Asthma. Explain types, aetiology& risk factors of bronchial asthma in detail.
2. Explain Samprapti&chikitsa of TamakaSwasa in detail.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Write the role of interleukin in Bronchial Asthma.
4. Write the clinical examination in-patient with Bronchial Asthma.
5. Discuss VyavachedakaNidana of TamakaSwasa.
6. Explain Trividha Karma of Virechana.
7. Incidence and prevalence of bronchial asthma is on rise in India- justify.
8. Write about PathyaApathya after Virechana Karma.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF AYURVEDA

PAPER – II

Q.P. Code: B24408

Reg.No: DO1223032

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Explain anatomical & physiological aspects of muscular skeletal disorders with examples.
2. Explain Shodhana and shamanachikitsa of amavata.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Elaborate Aetiology and risk factors of Rheumatoid arthritis.
4. Explain clinical examination in patients with rheumatoid arthritis.
5. Write the ACR guidelines related to diagnosis of Rheumatoid arthritis.
6. Explain briefly differential diagnosis of Rheumatoid arthritis.
7. Write briefly about AsthivataSrotas – Dusti Karana &Lakshana.
8. Write about clinical application of Pathya apathy of Amavata.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF AYURVEDA
PAPER – II

Q.P. Code: B24409

Reg.No: DO1223033

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Define dermatoglyphics, srotas sharir, polycystic ovarian syndrome (PCOS) and elaborate Aartav vaha srotas with respect to PCOS.
2. Elaborate risk factors, pathophysiology, clinical features and management of PCOS with respect to Aartav vaha srotovikara. (5+5+5+5)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Discuss different patterns of fingers & palm. Justify the relation with Aartav vaha srotas. (5+5)
4. Elaborate different methods of printing and importance of dermatoglyphics. (4+6)
5. Discuss analysis of dermatoglyphics and explain how it helps in the Chikitsa of Aartav vaha srotovikara. (3+7)
6. Elaborate recent researches on application of dermatoglyphics.
7. Explain the concept of dermatoglyphics in Ayurveda with respect to menstrual disorder. (5+5)
8. Explain the investigations used to diagnose a case of PCOS.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF AYURVEDA
PAPER – II

Q.P. Code: B24410

Reg.No: DO1223034

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Define Prevention. Explain in detail about Preventive principles explained in Ayurveda & levels of prevention in contemporary medical science.
2. Define Lifestyle & Vihara. Explain the role of Ahara, Vihara, Yogic intervention & Aushadha in prevention of Sthoulya.

(4+8+8)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Explain Balanced diet as per Ayurveda. Write in brief about Ahara Pravicharana applicable in Sthoula roga.
4. Define Pathya and write Nitya sevaniya ahara as per Vagbhata. Write in brief about factor depends on Pathya ahara.
5. What are Santarpanjanya vyadhi and their general line of management? Write a Critical note on the concept of Ashta nindita purusha.
6. Explain in brief about Dhamani pratichaya & it's line of management.
7. Define Mental Health. Write holistic approach in the promotion of mental health of obese individual.
8. Write in detail about importance of Dinacharya and Rutucharya in the prevention of Sthoulya.

(4+6)

(3+3+4)

(3+3+4)

(5+5)

(4+6)

(5+5)

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF AYURVEDA
PAPER – II

Q.P. Code: B24411

Reg.No: DO1223035

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Critically analyse nidana, samprapti, manifestations, upashaya and sadhya sadhyata of Bhagandara. (3+5+5+3+4)
2. Elaborate risk factors, pathophysiology, diagnostic criteria and clinical features of Bhagandara. (5+5+5+5)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Discuss anatomical consideration of Fistula-in-Ano with respect to Bhagandara.
4. Explain the radiological and pathological investigations of Bhagandara with justifications. (4+6)
5. Enlist types of Bhagandara. Explain anatomy of ano-rectum in detail (3+7)
6. Elaborate preparation of Kshara and Kshara sutra with it's clinical utility in Bhagandara. (3+3+4)
7. Explain chikitsa sutra and critically appraise the shaman chikitsa of Bhagandara. (4+6)
8. Explain recent researches and current advancements on Fistula-in-Ano with respect to Bhagandara. (5+5)

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF NURSING
PAPER – II**

Q.P. Code: B24501

Reg.No: DO1223036

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Describe the principles of growth & development in children. Explain the concepts & theory influencing growth & development of school going child.
2. Explain the effects of hospitalization on the child and family in detail. Explain the importance of play therapies for sick and hospitalized child including nurses role.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Illustrate in detail complications of IV therapy.
4. Describe legal & ethical issues in paediatric nursing.
5. Pain assessment standardized scales & it's uses in paediatric nursing care.
6. Newer studies and trends in paediatric nursing.
7. Nurses responsibilities in managing IV therapy in sick child.
8. Explain parent child relationship in pediatric nursing.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF NURSING
PAPER – II**

Q.P. Code: B24502

Reg.No: DO1223037

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Discuss the structure and function of the female reproductive system & the physiological processes involved in menstruation and reproduction.
2. Explore the impact of lifestyle factors on infertility, discussing how various elements such as diet and weight, exercise and sleep activities will contribute to reproductive health. Analyse current research on how these factors influence fertility in both men and women.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. How does poor nutrition impact women's health across different life stages, including adolescence, pregnancy and menopause? Discuss the key nutritional needs and challenges during the infertility and propose strategies to address them.
4. Analyze the psychological and emotional impact of infertility on women. Discuss how mental health assessments and support services are integrated into the infertility diagnosis and treatment process.
5. Discuss the advancements in reproductive technologies and their impact on the diagnosis and treatment of female infertility.
6. Discuss the role of genetic testing in the diagnosis and treatment of infertility.
7. Discuss the role of nurse in education and counseling among infertile couple.
8. Enumerate on ethical and legal aspects in female infertility.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF NURSING
PAPER – II**

Q.P. Code: B24503

Reg.No: DO1223038

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Discuss the leading causes of unintentional injuries in children. Discuss the factors contributing to these injuries and propose strategies for prevention and intervention.
2. Discuss Erik Erikson's psychosocial theory of development, focusing on how each of his eight stages corresponds to specific developmental milestones throughout the lifespan. How do the challenges and resolutions of each stage impact a child's emotional and social development?

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Discuss the epidemiology and common types of unintentional injuries in pediatric populations
4. Evaluate the role of parental supervision in preventing unintentional injuries among children. How does the quality and type of supervision (e.g., active versus passive supervision) influence injury rates?
5. Analyze the approach to emergency management and follow-up care for children who have sustained unintentional injuries.
6. Discuss the implications for long-term care and support, and propose strategies for addressing the ongoing needs of injured children and their families.
7. Discuss the long-term physical and emotional impacts of severe injuries on children. Discuss how such injuries can affect a child's development and quality of life.
8. Discuss the role of poor nutrition and nutritional needs of under-five children

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Max. Marks: 100

**FACULTY OF NURSING
PAPER – II**

Q.P. Code: B24505

Reg.No: DO1223040

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. a. Define exclusive breast feeding and explain the scope of exclusive breast feeding (EBF)
b. Discuss the maternal and newborn benefits of EBF
c. Elaborate the International and National guidelines on Breast feeding (8+6+6)
2. a. Define Sampling and enlist the types of sampling
b. Explain in detail about Purposive sampling techniques (10+10)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Discuss the physiological and psychological changes during first trimester of pregnancy
4. Draw a health education plan on Breastfeeding to a group of first time mothers
5. Describe the legal and ethical considerations to be followed while conducting the research
6. Define theoretical framework. Discuss the Health belief model with an example
7. Elaborate various tools used for data collection with appropriate examples for each tool
8. Explain various ways to disseminate research findings. Discuss the steps of writing a manuscript for a journal

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**FACULTY OF NURSING
PAPER – II**

Q.P. Code: B24506

Reg.No: DO1223041

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. a. Define Abortion and list the types of abortion
b. Discuss the etiological factors for abortion
c. Explain in detail about the management of threatened abortion by using nursing process (6+7+7)
2. a. Discuss the psychological impact of abortion on woman and her family
b. Enumerate the steps followed in post abortion counseling of couples (10+10)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Explain Medical Termination of Pregnancy- Act, amendments and benefits
4. Discuss Surgical method of abortion – Manual vacuum aspiration and Dilatation and curettage
5. Explain advantages and disadvantages of medical method of abortion
6. Discuss about social factors which influence abortion
7. Explain the importance of clinical assessment of woman admitted for abortion
8. Draw a neat diagram of internal organs of reproduction and explain the functions of them.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF NURSING
PAPER – II**

Q.P. Code: B24507

Reg.No: DO1223042

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Define congestive cardiac failure (CCF). Describe the pathophysiology and diagnostic evaluations related to CCF. Explain the treatment modalities and nursing management. (2+8+10)
2. Explain the different types of coronary artery bypass grafting (CABG). Write the pre-operative, intraoperative and post-operative nursing management of patient undergoing CABG. (5+15)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Define cardiac catheterization. Explain the types of cardiac catheterization and role of nurse after the catheterization. (2+3+5)
4. Define myocardial infarction (MI). Explain the risk factors and medical management of patients with MI. (2+3+5)
5. Write a note on pleural effusion.
6. Write a note on cardiac rehabilitation.
7. Define pneumonia. Describe the different types of pneumonia with clinical manifestations. Explain the nursing management by using nursing process. (2+3+5)
8. Define hypertension. Explain the types of antihypertensive drugs with nurse's responsibilities.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF NURSING
PAPER – II**

Q.P. Code: B24508

Reg.No: DO1223043

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. a) Explain the stages of End stage renal disease (ESRD).
b) Write the medical, surgical and nursing management of ESRD.
2. a) Write the types, principles and vascular access sites of haemodialysis.
b) Explain the procedure of haemodialysis

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Describe Nosocomial infections in intensive care unit.
4. Explain the role of advance practitioner in nephrological nursing.
5. Discuss Diet and nutrition in chronic renal failure.
6. Enumerate Rehabilitation of patient with dialysis.
7. Explain psychological impact of Arterio-venous fistula on dialysis patient.
8. Explain the pathophysiology and management of Acute renal failure (ARF).

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF NURSING
PAPER – II**

Q.P. Code: B24510

Reg.No: DO1223045

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Define adolescent health. Discuss in detail the profile of adolescents health in India, the factors affecting adolescent health and importance of physical health in adolescents.
2. Discuss in detail about the common physical, mental and nutritional health problems of adolescents and strategies for promoting adolescents health.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Discuss the causes and consequences of overweight and obesity in adolescents. Suggest strategies to prevent and manage such conditions
4. Discuss the special needs of adolescents. Explain support and directions from their parents, teachers and classmates.
5. Explain the importance of menstrual hygiene and management in adolescents. Discuss the challenges they face and suggest effective practices to ensure proper menstrual health.
6. What are the causes and symptoms of Anemia in adolescents? Discuss its impact on their overall health and suggest measures for prevention and management.
7. Describe the role of a nurse in detail about attaining and maintaining the adolescent's health. Discuss the collaborative measures with teachers and parents for promoting adolescents health.
8. Describe physical, emotional, social/behavioural development in adolescents. How do these changes impact their overall wellbeing?

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF PHARMACY
PAPER – II

Q.P. Code: B24302

Reg.No: DO1223048

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Explain the role of inflammation and molecular mechanism involved in development of liver cancer. Describe the therapeutic targets in the treatment of hepatocellular carcinoma.
2. Describe in-vitro and in-vivo experimental models two each for preclinical screening in hepatocellular carcinoma. Discuss the role of network pharmacology in screening of phytoconstituents in preclinical research.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Discuss the types, etiology and pathogenesis of inflammation. Discuss the characteristic features of acute inflammation.
4. Explain the causes, pathogenesis and mechanism involved in the development of cancer. Add note on metastasis of cancer.
5. Describe the role of hepatitis and non-resolving inflammation in the development of hepatocellular carcinoma.
6. Explain the principles involved in ELISA and flow cytometry. Discuss their role in cross validation of results.
7. Describe different types of cell culture techniques their principles and applications in drug discovery.
8. Justify the significance of bioinformatics in translational drug discovery.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF PHARMACY
PAPER – II**

Q.P. Code: B24308

Reg.No: DO1223054

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Discuss in detail preparation of nanoparticle drug delivery systems and its *in vitro* characterization. (10+10)
2. Elaborate on various process optimization technique adopted in pharmaceutical industry.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Enumerate Pathophysiology of Alzheimer's disease and explain induction model used for Alzheimer's disease. (5+5)
4. Enlist types of gelling system used in nasal drug delivery system. Add a note on evaluation of *in situ* gelling systems. (3+7)
5. Explain applications and principle involved in HPLC and HPTLC (5+5)
6. Outline the advantages and disadvantages of brain targeted drug delivery system. Briefly write about drug selection criteria. (3+7)
7. Explain in detail CPCSEA guidelines to be followed for animal experiments.
8. Justify the importance of nano-structured carriers in drug delivery system. (3+7)
Explain methods of preparation of nano-structured lipid carrier.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF PHARMACY
PAPER – II**

Q.P. Code: B24309

Reg.No: DO1223055

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number	Marks
LONG ESSAY QUESTIONS:	2 X 20 = 40
1. Discuss method validation parameters and qualitative & quantitative analysis of drugs.	(10+10)
2. Describe in detail principle and instrumentation of HPTLC & HPLC.	(10+10)
SHORT ESSAY QUESTIONS:	6 X 10 = 60
3. Define and classify Flavonoids.	
4. Explain in detail principle and instrumentation of Gas chromatography.	
5. Explain how regulatory guideline helps in analytical method development.	
6. Discuss recent advances in green chemistry and different methods of green extraction.	
7. Explain principle and instrumentation of TLC.	
8. Explain principle and instrumentation of Paper chromatography.	

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF PHARMACY
PAPER – II**

Q.P. Code: B24310

Reg.No: DO1223056

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. What is the history and cultural significance of Herbal medicines? Discuss the active principles and extraction methods of herbal medicines.
2. Write the principle, instrumentation and applications of U V Spectroscopy. Write quantitative and qualitative applications of U V Spectroscopy.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Write the Physical and chemical properties of Chrysin. Different analytical methods.
4. Define and classify Chromatographic techniques based on separation principle with examples.
5. Write the different analytical methods for herbal medicines.
6. Write the phytochemical properties of Kaemfeol with different analytical methods involved.
7. Write the principle, instrumentation and applications of HPTLC
8. What is QBD? Write types and importance of AQBD.

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PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF PHARMACY
PAPER – II**

Q.P. Code: B24311

Reg.No: DO1223057

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Discuss the development, mechanism of action, production and clinical application of anti snake venom (ASV) in treating snakebite envenomation.
2. Discuss the significance of preclinical studies in venom research, focusing on in-vitro cell culture assays.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Explain Anesthesia and Euthanasia in experimental animals.
4. Explain different techniques of blood sampling.
5. What are the major toxins of Indian cobra? Explain their mechanism of action.
6. Explain current challenges and future directions in anti snake venom use.
7. Discuss the basic differences between Necrosis, Apoptosis and Gangrene.
8. Discuss rodent studies in venom research.

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PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF PHARMACY
PAPER – II**

Q.P. Code: B24312

Reg.No: DO1223058

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. What is obesity? Enumerate the different *In vivo* animal models for antiobesity. Explain in detail the parameter to be measured to understand the effectiveness and mechanism of obesity. (2+8+10)
2. How to select a solvent and method of extraction for effective extraction? Elaborate on Successive and exhaustive extraction, super fluid extraction method, ultra sonic assisted solvent extraction method with advantages and disadvantages. (8+4+4+4)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Define Phytosomes. Mention the methods of preparation and evaluation of phytosomes. (2+4+4)
4. How to justify the selection of the plant *Ailanthus excelsa* as an antiobesity drug.
5. Explain in detail CPCSEA guidelines to conduct animal experiments.
6. Enumerate and Explain different parameters measured in *In Vitro* assay of obesity. (2+8)
7. Explain in detail the application of HPTLC, LCMS/GCMS in characterization of herbal extracts.
8. Explain in detail network Pharmacology and drug selection criteria in network Pharmacology. (5+5)

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PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF PHARMACY
PAPER – II**

Q.P. Code: B24313

Reg.No: DO1223059

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Enumerate and explain *In vivo* and *In vitro* models for evaluation of antidiabetic activity (10+10)
2. Explain in detail biodiversity of Western Ghats of India and their conservation methods. Write the basis of selection of plants from Western Ghats as an antidiabetic drug. (10+10)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Explain the types of diabetes mellitus. Explain its pathophysiology in detail.
4. Outline the analytical approaches used in chromatographic and spectral fingerprint of traditional medicine.
5. Define patent. Outline the ethical considerations and IPR in the development of herbal medicines.
6. Explain in detail mechanism of action of plant extracts in diabetes management.
7. Explain in detail the applications of HPTLC, emphasising on chemo profiling and marker analysis for quality evaluation of herbal drugs.
8. Explain in detail regulatory standards for manufacturing and analysis of phytomedicines.

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PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

**FACULTY OF PHARMACY
PAPER – II**

Q.P. Code: B24315

Reg.No: DO1223061

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Compare and contrast between hepatocellular carcinoma (HCC) and hepatocellular adenoma. Discuss the risk factors for both the types. Briefly outline the histological feature of hepatocellular carcinoma.
2. Explain the role of immune checkpoints in the Hepatocellular carcinoma. Discuss current immune checkpoint inhibitor therapy for hepatocellular carcinoma.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Explain the etiopathogenesis of HCC. Outline the morphological changes and clinical manifestations of HCC.
4. Describe the mechanistic basis and therapeutic strategies for immune evasion in HCC.
5. Describe *in-vitro* and *in-vivo* experimental models for preclinical research in Hepatocellular Carcinoma.
6. Describe the principles of immunocytochemistry. Outline the cell preparation, fixation and antibody staining techniques in immunocytochemistry.
7. Explain the pharmacological and therapeutic potential of Asarone. Add note on toxicity and safety profile.
8. Compare and contrast western blotting, ELISA and immunocytochemistry for cross validation of results.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF PHYSIOTHERAPY
PAPER – II

Q.P. Code: B24601

Reg.No: DO1223063

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Explain pathophysiology, diagnostic criteria and assessment of cervicogenic headache. (7+5+8)
2. Enumerate all the muscles of cervical spine in relation to the movements with its origin and insertion. Write a note on atlanto axial complex. 10+10)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Kinetics and kinematics of cervical spine.
4. Dural tube and myodural bridge.
5. Write a note on cervical snags.
6. Physiological effects of fascia release.
7. Write any **FIVE** evidence based practice in management of cervicogenic headache.
8. Combined movement assessment for cervical spine.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF PHYSIOTHERAPY
PAPER – II

Q.P. Code: B24602

Reg.No: DO1223064

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Write various tools used for assessment of the development in preterm babies. Elaborate at least one with its methods of administration.
2. Write various interventional strategies for managing high risk babies.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Write administration procedure of Oxford Neurodevelopment Tool.
4. How to manage language and behavioural issues in developmental delay child?
5. Write various diagnostic criteria used for identifying developmental delay.
6. How to identify and manage cognitive issues in developmental delay child?
7. How to manage a pubertal male spastic diaplegia of 12 year old child?
8. What are causes for low birth weight baby? Write in brief about the physiological aspect of the same.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF PHYSIOTHERAPY
PAPER – II

Q.P. Code: B24604

Reg.No: DO1223066

Answers should be specific to the Questions asked.
Draw neat, labeled diagrams wherever necessary.
All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Explain in detail the assessment method for core muscle strength. Add a note on strength testing methods and role of core muscle in different activities.
2. Discuss in detail the objectives of static and dynamic postural assessment. Add a note on advanced postural assessment techniques.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Role of EMG in postural deviation.
4. Application of Ultrasonography in Muscle strength assessment.
5. Discuss physiology of core Muscles.
6. Discuss importance of postural assessment in day to day activities.
7. Use of Sensors in posture analysis.
8. Common patterns leading to imbalances in low back region. Add note on Ergonomic and life style adjustments.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF PHYSIOTHERAPY

PAPER – II

Q.P. Code: A24501

Reg.No: DO1222014

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Discuss the procedure, Indicators and contraindication of chorionic villus biopsy.
2. Discuss various types of placenta.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Discuss abnormal placental attachments.
4. Discuss the Histology of placenta.
5. Discuss placenta previa and its types.
6. Discuss physiological role of placenta during pregnancy.
7. Discuss development of placenta.
8. Discuss complication caused by placental abnormality.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF SCIENCE: INTER-DISCIPLINARY

PAPER – II

Q.P. Code: B24701

Reg.No: DO1223067

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Discuss in detail about immunity / immune responses, concept of autoimmunity and autoimmune disorders (8+8+4)
2. Discuss in detail about Rheumatoid arthritis (RA)- pathophysiology, clinical symptoms and signs. (6+8+6)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Explain treatment options for RA, mechanism of action of each drug used and their side effects and also the need for newer medications for RA (3+5+2)
4. Explain methods of computational screening tools for predicting targets and toxicity of phytoconstituent (5+5)
5. Explain the available animal models for study on RA, their limitations and newer methods for animal modelling (5+3+2)
6. Write a brief note on medicinal plants used for RA and highlight the importance of western ghat medicinal plants. (8+2)
7. Write a brief note on principle and different types of ELISA. (2+3+5)
8. Write a brief note on Gene set enrichment and network pharmacology analysis (4+6)

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF SCIENCE:INTER-DISCIPLINARY

PAPER – II

Q.P. Code: B24702

Reg.No: DO1223068

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Describe the disease aetiology, staging and the molecular mechanisms associated with the origin and progression of Alzheimer's disease.
2. What are the diagnostic methods and treatment options available for Neurodegenerative diseases in conventional medicine? Highlight the molecules that can be detected/targeted in the diagnosis and therapy of various neurodegenerative conditions respectively.

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. List the plants/formulations that are used in AYUSH medicinal systems for various Neurodegenerative conditions and highlight the mechanisms of action if known.
4. (a) Are there any plants or formulations that are being used in the treatment of Neurodegenerative conditions in the non-codified system of medicine. If yes, please elucidate
(b) What is the standard method/s used to identify, record and study non-codified ethnomedicinal practices?
5. What are the complexities and issues with the current treatment options available for Neurodegenerative diseases? What are the gaps in drug development with respect to Neurodegenerative diseases?
6. What are the methods to deal with various kinds of contaminations in cell culture? Also, mention the various methods followed to avoid contamination in cell culture.
7. (a) What is the role of post-translational modifications in health and disease?
(b) How does one study post translational modifications using molecular biology and proteomics approach?
8. (a) How can the phytochemical efficacies be tested on cell lines with respect to studies on Neurodegenerative conditions?
(b) What are organoids? How can they be game changers in the research and development of neurodegenerative diseases?

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF SCIENCE: INTER-DISCIPLINARY

PAPER – II

Q.P. Code: B24703

Reg.No: DO1223069

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number	Marks
LONG ESSAY QUESTIONS:	2 X 20 = 40
1. Discuss in detail about virus classification and brief listing of viruses in different class, laboratory techniques for viral diseases diagnosis.	(10+10)
2. Discuss in detail about Hepatitis C Virus (HCV), genome structure, pathophysiology, clinical symptoms/ signs; HCV epidemiology, genotypes and their clinical importance of HCV infection.	(6+4+6+4)
SHORT ESSAY QUESTIONS:	6 X 10 = 60
3. Explain methods of virus isolation techniques, limitation and advantages of each technique.	(5+5)
4. Explain treatment options for HCV, mechanism of action of each drug used and their side effects and also the need for newer medications for HCV	(3+5+2)
5. Explain about the national programs related to HCV.	(5+3+2)
6. Write a brief note on HCV NS5A gene, mutations and their importance.	(4+6)
7. Write a brief note on Sequencing, principle of sequencing, different platforms for the sequencing.	(2+3+5)
8. Write a brief note on biomedical waste management in virology laboratory.	

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF SCIENCE:INTER-DISCIPLINARY

PAPER – II

Q.P. Code: B24704

Reg.No: DO1223070

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. What are the hallmark features of cancer? Write a note on risk factors, preventive measures and treatment options available with respect to glioblastoma. (10+3+3+4)
2. Explain the methods with principles of sterilization and disinfection techniques, cell counting and viability assays employed in cell culture. (10+10)

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Write a note on the different methods of cell culture emphasising on the merits, demerits and applications of each method. Add a note on different types of cell culture media. (6+4)
4. What is glioblastoma stemcells? Explain their significance with respect to tumour heterogeneity and treatment modalities. (4+6)
5. Defining the nanoparticles briefly note down their unique properties and mention how these properties find their applications in biotechnology.
6. Illustrate the applications of exosomes in general and comprehensively explain about milk derived exosomes, their isolation methods. (4+6)
7. Write a comparative note between apoptosis and necrosis. Which methods are used to detect apoptosis? Define oncogenes and tumour suppresser genes with suitable examples. (4+4+2)
8. With a suitable example explain the application of cell culture in drug delivery, vaccine production and cancer therapy. (4+3+3)

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 3 Hours

Max. Marks: 100

FACULTY OF SCIENCE: INTER-DISCIPLINARY

PAPER – II

Q.P. Code: B24705

Reg.No: DO1223072

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 20 = 40

1. Discuss in detail about the mechanisms of drug resistance to antimicrobial agents. Add a note on antimicrobial resistance in UTI globally and in India.
2. Describe in brief the anatomy of Urinary tract. Write about the microbial etiology of Urinary tract infections (UTI).

SHORT ESSAY QUESTIONS:

6 X 10 = 60

3. Describe in brief the laboratory diagnosis of Urinary tract infections.
4. Discuss in brief different techniques for antimicrobial susceptibility assays.
5. Write a note on traditional medicinal plants used in Urinary tract infections.
6. Write a note on quality control methods in preparation of plant extracts.
7. Write a note on concept of 3 R's in use of animals for research studies.
8. Write in detail about the epidemiological triad in communicable diseases.

PRE Ph.D. EXAMINATION – OCTOBER 2024

Time: 2 Hours

Max. Marks: 50

PAPER – III

BIOSTATISTICS

Q.P. Code: 7003

Answers should be specific to the Questions asked.

Draw neat, labeled diagrams wherever necessary.

All questions are compulsory.

Question Number

Marks

LONG ESSAY QUESTIONS:

2 X 10 = 20

1. Explain in detail probability and non-probability sampling method along with their advantages and disadvantages.
2. Describe the meaning of title – consistency with objectives and expected outcomes along with limitations of study.

SHORT ESSAY QUESTIONS:

5 X 6 = 30

3. Describe bar diagram, along with situations where bar diagrams are used.
4. Explain mean deviation and standard deviation with suitable example.
5. Discuss z-test with suitable examples.
6. Discuss cleaning of data.
7. Define SMART in thesis writing with suitable example.
