OEPY 201

II Semester All UG Courses Examination, Oct./Nov. 2022
(NEP Scheme)
PSYCHOLOGY (Open Elective – II)
Gender, Youth and Identity

Time : 2½ Hours

Max. Marks : 60

Instructions : 1) ***All three*** *Sections are* ***compulsory***.
2) ***All*** *answers must be written* ***completely*** *either in* ***Kannada*** *or* ***English***.

SECTION – A
ವಿಭಾಗ - ಎ

Answer **any 6** of the following questions. **Each** answer carries **2** marks. **(6×2=12)**
ಕೆಳಗಿನ ಯಾವುದಾದರೂ **6** ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. **ಪ್ರತಿ** ಉತ್ತರಕ್ಕೆ **2** ಅಂಕಗಳು.

1. Define Youth.
ಯುವಜನತೆಯನ್ನು ವ್ಯಾಖ್ಯಾನಿಸಿ.

2. What is Identity ?
ಅನನ್ಯತೆ ಎಂದರೇನು ?

3. What constitutes a family ?
ಕುಟುಂಬವು ಏನನ್ನು ಒಳಗೊಂಡಿದೆ ?

4. What is intergenerational gap ?
ಅಂತರ್ ಪೀಳಿಗೆ ಎಂದರೇನು ?

5. What is body image ?
ದೇಹ ಪ್ರತಿಮೆ ಎಂದರೇನು ?

6. Mention any two influence of globalization on gender identity.
ಲಿಂಗ ಅನನ್ಯತೆಯ ಮೇಲೆ ಜಾಗತೀಕರಣದ ಯಾವುದಾದರೂ ಎರಡು ಪ್ರಭಾವಗಳನ್ನು ಹೆಸರಿಸಿ.

7. Define violence.
ಹಿಂಸೆಯನ್ನು ವ್ಯಾಖ್ಯಾನಿಸಿ.

8. Who is a Juvenile delinquent ?
ಬಾಲಾಪರಾಧಿ ಎಂದು ಯಾರನ್ನು ಕರೆಯುತ್ತಾರೆ ?

9. Expand UNICEF.
UNICEF ನ್ನು ವಿಸ್ತರಿಸಿ.

P.T.O.

SECTION – B
ವಿಭಾಗ - ಬಿ

Answer **any 4** of the following. **Each** answer carries **6** marks. **(4×6=24)**
ಕೆಳಗಿನ ಯಾವುದಾದರೂ **4** ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. **ಪ್ರತಿ** ಉತ್ತರಕ್ಕೆ **6** ಅಂಕಗಳು.

1. Explain extended youth in the Indian context.
   ಭಾರತೀಯ ಸನ್ನಿವೇಶದಲ್ಲಿ ವಿಸ್ತೃತ ಯುವಜನತೆಯನ್ನು ವಿವರಿಸಿ.
2. Explain methods to reduce intergenerational gap.
   ಅಂತರ್ ಪೀಳಿಗೆಯ ಅಂತರ ಕಡಿಮೆ ಮಾಡುವ ವಿಧಾನಗಳನ್ನು ವಿವರಿಸಿ.
3. Explain the aspects related to gender discrimination.
   ಲಿಂಗ ತಾರತಮ್ಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದ ಅಂಶಗಳನ್ನು ವಿವರಿಸಿ.
4. Discuss the issues related to youth, gender and violence.
   ಯುವಜನತೆ, ಲಿಂಗ ಮತ್ತು ಹಿಂಸೆಗೆ ಸಂಬಂಧಿಸಿದ ಸಮಸ್ಯೆಗಳನ್ನು ವಿವರಿಸಿ.
5. Explain the UNICEF program for youth.
   ಯುವಜನತೆಗಾಗಿ ಇರುವ UNICEF ಕಾರ್ಯಕ್ರಮಗಳನ್ನು ವಿವರಿಸಿ.
6. Describe Juvenile Justice Act.
   ಬಾಲಾಪರಾಧ ಕಾಯ್ದೆಯನ್ನು ವಿವರಿಸಿ.

SECTION – C
ವಿಭಾಗ - ಸಿ

Answer **any 3** of the following. **Each** answer carries **8** marks. **(3×8=24)**
ಕೆಳಗಿನ ಯಾವುದಾದರೂ **3** ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. **ಪ್ರತಿ** ಉತ್ತರಕ್ಕೆ **8** ಅಂಕಗಳು.

1. Describe the aspects related to transition to adulthood.
   ವಯಸ್ಕಾವಧಿಗೆ ಪರಿವರ್ತಿತಗೊಳ್ಳುವಿಕೆಗೆ ಸಂಬಂಧಿಸಿದ ಅಂಶಗಳನ್ನು ವಿವರಿಸಿ.
2. What is peer group identity ? Discuss the importance of friendship.
   ಸಮವಯಸ್ಕ ಅನನ್ಯತೆ ಎಂದರೇನು ? ಸ್ನೇಹದ ಪ್ರಾಮುಖ್ಯತೆಯನ್ನು ಚರ್ಚಿಸಿ.
3. Discuss the issues of sexuality in youth.
   ಯುವಜನತೆಯ ಲೈಂಗಿಕತೆಯಲ್ಲಿನ ಸಮಸ್ಯೆಗಳನ್ನು ಚರ್ಚಿಸಿ.
4. Explain how work-life balance can be enhanced.
   ವೃತ್ತಿ-ಜೀವನ ಸಮತೋಲನವನ್ನು ಹೆಚ್ಚಿಸುವುದು ಹೇಗೆ ಎಂಬುದನ್ನು ವಿವರಿಸಿ.
5. Explain LGBT rights in India.
   ಭಾರತದಲ್ಲಿರುವ LGBT ಹಕ್ಕುಗಳನ್ನು ವಿವರಿಸಿ.

BSKN 202

ಎರಡನೇ ಸೆಮಿಸ್ಟರ್ ಬಿ.ಎಸ್ಸಿ. ಪದವಿ ಪರೀಕ್ಷೆ, ಅಕ್ಟೋಬರ್ / ನವೆಂಬರ್ 2022
(ಎನ್.ಇ.ಪಿ.)
ಕನ್ನಡ ಭಾಷೆ – II
ಕನ್ನಡ ವೈಭವ

ಸಮಯ : 2½ ಗಂಟೆಗಳು ಗರಿಷ್ಠಾಂಕಗಳು : 60

I. ಕೆಳಗಿನ ಯಾವುದಾದರೂ **ಆರಕ್ಕೆ** ಉತ್ತರಿಸಿ. **(6×2=12)**

1) ಎ. ಕೆ. ರಾಮಾನುಜನ್
2) ಢಾಕಿನೀ ಸಂಕುಳ
3) ಬಾದಾಮಿ ಶಾಸನ
4) ಸಣ್ಣ ಕತೆ
5) ಮಂಜಣ್ಣನ ಕರ್ಮಾಚರಣೆಗಳು
6) ತ. ರಾ. ಸು.
7) ಅಭಿರುಚಿ
8) ಸರ್ಕಾರಿ ಕನ್ನಡ
9) ಯಾಲಕ್ಕಿ ಮದುವೆಯಾಗದಿರಲು ಕಾರಣ.

II. ಕೆಳಗಿನ ಯಾವುದಾದರೂ **ನಾಲ್ಕು** ಪ್ರಶ್ನೆಗಳಿಗೆ ಸಂಕ್ಷಿಪ್ತವಾಗಿ ಉತ್ತರಿಸಿ. **(4×6=24)**

10) ಮಂಗೋಲಿಯದ ರಾಜ ಬಯಸಿದ ವಸ್ತುಗಳು.
11) ಮಿಲರೇಪನ ನೆನಪಿನಲ್ಲಿ ಕಾಡುವ ಸಂಗತಿಗಳು.
12) ಕನ್ನಡಕ್ಕಾಗಿ ರತ್ನ ಮಾಡುವ ತ್ಯಾಗದ ವೈಶಿಷ್ಟ್ಯ.
13) 'ಕುಂಬಳಕಾಯಿ' ಕತೆಯ ಸ್ವಾರಸ್ಯ.
14) ವಿಶ್ವನಾಥ ಮತ್ತು ಪಂಡಿತರ ವ್ಯಕ್ತಿತ್ವ.
15) ಆಧುನಿಕ ಶಿಕ್ಷಣ ಪದ್ಧತಿಯಿಂದ ಕನ್ನಡಕ್ಕೆ ಎದುರಾಗಿರುವ ಅಪಾಯಗಳು.

ಪು.ತಿ.ನೋ.

III. ಕೆಳಗಿನ ಯಾವುದಾದರೂ **ಮೂರು** ಪ್ರಶ್ನೆಗಳಿಗೆ ವಿವರವಾಗಿ ಉತ್ತರಿಸಿ. **(3×8=24)**

16) 'ಸೀಮಂತಿನಿ' ಪದ್ಯದಲ್ಲಿ ಜೀವ ವಾತ್ಸಲ್ಯ ಭಾವ ಹೇಗೆ ವ್ಯಕ್ತವಾಗಿದೆ ? ವಿವರಿಸಿ.

17) ಮನುಷ್ಯ ಸಂಬಂಧದ ಮಹತ್ವವನ್ನು 'ಭೂಮಿಯೂ ಒಂದು ಆಕಾಶ' ಕವಿತೆ ಹೇಗೆ ಪ್ರತಿಪಾದಿಸುತ್ತದೆ ? ವಿವರಿಸಿ.

18) ಹೆಣ್ಣಿನ ಬಗೆಗಿನ ಗಂಡಿನ ಮನೋಭಾವ 'ಇನ್ನೊಂದು ಮುಖ' ಕತೆಯಲ್ಲಿ ಮೂಡಿ ಬಂದಿರುವ ರೀತಿಯನ್ನು ವಿವರಿಸಿ.

19) 'ಪಂಪಭಾರತ'ದಲ್ಲಿ ಚಿತ್ರಿತವಾಗಿರುವ ಮನುಷ್ಯನ ಶೋಧನೆಯ ಮಹತ್ವವನ್ನು ವಿವರಿಸಿ.

20) ವೃತ್ತ ಪತ್ರಿಕೆಗಳು ಮತ್ತು ಸಮೂಹ ಮಾಧ್ಯಮಗಳಲ್ಲಿ ಬಳಕೆಯಾಗುತ್ತಿರುವ ಕನ್ನಡ ಭಾಷೆಯ ಪರಿಸ್ಥಿತಿ ಕುರಿತು ವಿವರಿಸಿ.

DCCS 201

II Semester B.Sc. Degree Examination, Oct./Nov. 2022
(NEP Scheme)
COMPUTER SCIENCE
DSC – 2 : Data Structures Using C

Time : 2½ Hours | Max. Marks : 60

Instruction *: Answer* ***all*** *the Sections.*

SECTION – A

I. Answer **any 6** questions. **Each** question carries **2** marks. **(6×2=12)**

1) Define Data structure.
2) What are the Asymptotic notations ?
3) What is Recursion ?
4) Write the memory representation of single dimensional array.
5) What are the operations on arrays ?
6) What do you mean by Garbage Collection ?
7) Write any two applications of stack.
8) Write any two advantages of Circular queue.
9) What do you mean by Complete binary tree ?

SECTION – B

II. Answer **any 4** questions. **Each** question carries **6** marks. **(4×6=24)**

10) What are the advantages and disadvantages of arrays ?
11) Compare Linear Search and Binary Search.
12) Explain the memory allocation functions with examples.
13) Explain the Stack operations.
14) Write the algorithm for insertion of a Queue.

P.T.O.

15) Explain the following :

1) Leaf node of a tree

2) Level of a tree

3) Degree of a tree.

SECTION – C

III. Answer **any 3** questions. **Each** question carries **8** marks. **(3×8=24)**

16) Write the algorithm for Tower of Hanoi with examples.

17) Write a program for Bubble sort technique.

18) a) Compare singly linked list and doubly linked list. **4**

b) Evaluate the following Postfix expression using stack. **4**
1532 +/7+*

19) Explain the following : **(4+4)**

a) Double ended queue

b) Priority queue.

20) Explain any two Tree traversals of a binary tree.

DCFS 201

II Semester B.Sc. Degree Examination, Oct./Nov. 2022
(NEP Scheme)
FORENSIC SCIENCE
Crime Scene Management

Time : 2½ Hours | Max. Marks : 60

PART – A

Answer **any 6** questions. **Each** question carries **1** mark. **(6×1=6)**

1. Define outdoor crime scene.
2. Define victim, witness and suspects.
3. What is base line method ?
4. Define zone/quadrant method.
5. What is semen ?
6. What is saliva ?
7. Expand ABFO scale and GPR.
8. Define road traffic accident.

PART – B

Answer **any 6** questions. **Each** question carries **2** marks. **(6×2=12)**

9. Explain the role of judicial officer.
10. Define standard sample and control sample.
11. What is preliminary walk through ?
12. Explain triangulation method.
13. What is medullary index and explain different hair patterns ?

P.T.O.

14. Define chain of custody.

15. Explain crime scene investigation kit.

16. Define refractive index.

PART – C

Answer **any 3** questions. **Each** question carries **4** marks. **(3×4=12)**

17. Briefly explain the safety measures to be kept at the crime scene.

18. Explain crime scene mapping.

19. Write a short note on glass evidence and its collection method.

20. Explain the stages of crime scene reconstruction.

PART – D

Answer **any 5** questions. **Each** question carries **6** marks. **(5×6=30)**

21. Discuss the methods to collect and preserve biological evidence.

22. Explain the role of different agencies involved in crime scene management.

23. Explain the importance of sketching in crime scene.

24. Explain crime scene search patterns.

25. Explain the collection method of semen, tissue and hair.

26. Explain the collection and preservation of glass fragments.

27. Explain about the equipment's needed for crime scene investigation.

DCPH 201

II Semester B.Sc. Degree Examination, Oct./Nov. 2022
(NEP Scheme)
PHYSICS
Electricity and Magnetism

Time : 2½ Hours Max. Marks : 60

Instruction : ***Use*** *of non-programmable calculators is* ***permitted.***

PART – A

Answer **any six** questions. **Each** question carries **one** mark : **(1×6=6)**

1. What is a gaussian surface ?
2. Give the relation between electric field and electric potential at a point.
3. Why is an HTG preferable to a tangent galvanometer to measure currents ?
4. What is meant by critical damping ?
5. What is the internal resistance of an ideal current source ?
6. What is meant by wattless current ?
7. What are persistent currents in relation to a super conductor ?
8. Define the term "retentivity".

PART – B

Answer **any six** questions. **Each** question carries **two** marks : **(2×6=12)**

9. What is an electric dipole ? What will be the dipole moment of a dipole whose arm is zero ?
10. What is the physical significance of the gradient of a scalar function ?
11. How do you determine the Thevenin resistance of a circuit ?

P.T.O.

12. The distance between the plates of a parallel plate capacitor is d. If a metal plate of thickness $\frac{d}{2}$ is introduced between the plates, how does the capacitance change ?

13. Define mutual inductance between a pair of coils.

14. What are true power and virtual power as applied to ac circuits. What is the significance of the ratio of true power to apparent power ?

15. How does an accelerated charge produce electromagnetic waves ?

16. Classify hard and soft magnetic materials.

PART – C

Answer **any three** questions. **Each** question carries **four** marks : **(3×4=12)**

17. In a certain region the electrostatic potential is given by the expression $V = 4x^2 + 3y^2 - 12z^2$. What is the electric intensity at a point (1, 2, 4) in this region ?

18. An ebonite plate (K = 3) 6 mm thick is introduced between the parallel plates of a capacitor of plate area $2 \times 10^{-2}\ m^2$ and plate separation 0.01 m. Find the capacitance.

19. The ac voltage and current in a circuit are given by $e = 110 \sin(\omega t + \pi/6)$ and $i = 5 \sin(\omega t - \pi/4)$respectively. Find the impedance and the average power dissipated in the circuit.

20. Approximately how large must be the magnetic induction, for the orientational energy to be comparable to the thermal energy at room temperature. Assume $\mu_m = 5\mu_B$.

PART – D

Answer **any five** questions. **Each** question carries **six** marks : **(5×6=30)**

21. Obtain an expression for the electric field due to an infinite sheet of charge. **6**

22. State and prove the Norton's theorem. **6**

23. What are polar dielectrics ? Obtain an expression for the Gauss law in the presence of a dielectric. **(1+5=6)**

24. Obtain the relation $\sigma = \frac{ne^2\tau}{m}$ where the symbols have their usual significance.

    Mention one limitation of ohm's law. **(5+1=6)**

25. Obtain an expression for the magnetic field due to an infinitely long straight current carrying conductor at a point near one end. **6**

26. Obtain an expression for impedance of an L-R circuit supplied with an ac voltage $e = e_0 \sin\omega t$ using the j operator method. What are half power frequencies ? **(5+1=6)**

27. Derive the Maxwell's electromagnetic equations : $\nabla.B = 0$ and $\nabla \times E = -\frac{\partial B}{\partial t}$. **(3+3=6)**

28. a) Compare and contrast the different types of magnetic materials. **(2+4=6)**

    b) Mention any two properties and two applications of hard and soft magnetic materials.

27/10/22

DCCN 202

Second Semester B.Sc. Degree Examination, October/November 2022
(NEP Scheme)
CLINICAL NUTRITION
DSC – 5 : Essentials of Micronutrients

Time : 2½ Hours | Max. Marks : 60

PART – A

I. Answer **any 6** of the following. **(6×1=6)**

1) Hyperkalemia : Higher potassium ::: Hypo Natremia : .....
2) Calcium : Macromineral ::: Iodine : .....
3) Describe electrolyte and mention the types.
4) Classify the Vitamins and Minerals.
5) Specify any 2 deficiencies of Mineral potassium.
6) Give two examples for deficiency for cyanocobalamine.
7) What are food sources for Vitamin E ?
8) Define Pellagra.

PART – B

II. Answer **any 6** of the following. **(6×2=12)**

1) Explain the molecular structure of water.
2) Write a note on the following.
   a) Pernicious Anaemia
   b) Dehydration
3) What is pH ? And write on its maintenance.
4) Elucidate relation between Folate and Folic acid.
5) List out the chemical and Alphanumeric names of Vitamin B complex.
6) What are the Food sources of Manganese and fluorine ?
7) Highlight the functions of Vitamin 'B_{12}'.
8) Write on composition of body fluids.

P.T.O.

PART – C

III. Answer **any 3** of the following. **(3×4=12)**

1) Signify the importance of water and its intake.
2) Explain the Balance, imbalance regulation of Electrolyte.
3) Brief note on RDA of some Macro minerals of adults.
4) Disclose the Interaction of Vitamins with Other nutrients.

PART – D

IV. Answer **any 6** of the following. **(5×6=30)**

1) Illustrate on the Deficiency of Macrominerals.
2) Demonstrate on the functions of Fat-soluble vitamins.
3) Derive the Food sources for Micro minerals.
4) Clarify on Hypervitaminosis of Water-soluble vitamins.
5) State on forms of Vitamin A and Vitamin D.
6) Give short note on post translational carboxylation. Put on the role of Vitamin K in blood coagulation.
7) How do you differentiate the RDA, Adequate intake, TUI level and estimated average requirement ?
8) Comment on the following :
   a) Distribution of Minerals
   b) Renin Angiotensin System
   c) Xerophthalmia
   d) Edema
   e) Ionic product of water.

DCFS 202

Second Semester B.Sc. Degree Examination, October/November 2022
(NEP Scheme)
FORENSIC SCIENCE
Basic Forensic Biology

Time : 2½ Hours | Max. Marks : 60

PART – A

I. Answer **any 6** of the following : **(6×1=6)**

1) Define Totipotency.
2) What is Karyotyping ?
3) Define Variation.
4) What are somatic cells ?
5) List few diseases caused by fungi.
6) Define Muscular tissue.
7) Define Parasites.
8) Give the expanded form for DNA and RNA.

PART – B

II. Answer **any 6** of the following : **(6×2=12)**

9) Draw a neat labeled diagram of Chloroplast.
10) Draw a neat labeled diagram of digestive system.
11) Write a note on beneficial microbes.
12) What are Antibiotics ?
13) What is Mitochondrial DNA ?
14) Explain elementary tissues of the body.
15) What are non chordates ?
16) Define meiosis.

P.T.O.

PART – C

III. Answer **any 3** of the following : **(3×4=12)**

17) Brief account on fluid mosaic model.

18) Write a note on Limnology.

19) Explain law of Dominance with example.

20) Write a short note on Chromosome.

PART – D

IV. Answer **any 5** of the following : **(5×6=30)**

21) Explain law of Independent assortment with example.

22) Give an account on Central dogma.

23) Discuss salient features of Pteridophyta.

24) Explain the process of Mitosis in detail.

25) Explain the process of Replication.

26) Discuss integumentary system in detail.

27) Discuss in detail male reproductive system.

29/10/22

DCCH – 201

II Semester B.Sc. Degree Examination, October/November 2022
(NEP Scheme)
CHEMISTRY (Paper II)
DSC – 2 : Analytical, Physical, Inorganic and Organic Chemistry

Time : 2½ Hours Max. Marks : 60

Instructions : *1) The Question Paper has **three** Parts. Answer **all** the Parts.*
*2) Draw diagrams and write chemical equations, **wherever** necessary.*

PART – A

Answer **any five** questions. **Each** question carries **two** marks. **(5×2=10)**

1. Write the structure of EDTA.
2. Sketch the nature of precipitation titration curve.
3. Define Collision frequency.
4. What is Joule-Thomsons effect ?
5. Write any two characteristics of Schottky defect.
6. State Nernst's distribution law.
7. Explain sulphonation of benzene.
8. State Huckel rule of aromaticity.

PART – B

Answer **any five** questions. **Each** question carries **four** marks. **(5×4=20)**

9. Describe the experimental determination of hardness of water using EDTA.
10. How do you estimate Nickel using dimethyl glyoxime (DMG) gravimetrically ?
11. Describe Linde's process for the liquifaction of air.
12. Explain the determination of molar mass of a solute by Beckmann's method.
13. Derive Bragg's equation.
14. Write any four differences between crystalline and amorphous solids.
15. Explain the mechanism of chlorination of benzene.
16. Explain the S_NAr reaction with an example.

P.T.O.

PART – C

Answer **any five** questions. **Each** question carries **six** marks. **(5×6=30)**

17. a) Define the following terms and write their equations.
    i) Limit of Detection (LOD)
    ii) Limit of Quantification (LOQ) **4**

    b) What are redox titrations ? Give an example. **2**

18. a) Explain Volhard method in the determination of halide concentration. **4**

    b) Define the term 'Super saturation'. **2**

19. a) The critical constants of HCl are $T_C = 325K$, $V_C = 8.10\times10^{-5}m^3mol^{-1}$. Calculate the Vander Waal's constants for the gas. **4**

    b) Define the term 'Collision diameter'. **2**

20. a) Explain the determination of viscosity of a liquid using viscometer. **4**

    b) What is the effect of temperature on the surface tension of liquid ? **2**

21. a) Define the following terms.
    i) Plane of symmetry
    ii) Axis of symmetry. **4**

    b) Calculate the miller indices for the plane with intercept (2a,2b,∞). **2**

22. a) Explain the application of parachor in the structural elucidation of benzene. **4**

    b) Name any two indicators used in redox titrations. **2**

23. a) Explain the mechanism of S_N2 reaction with a suitable example. **4**

    b) Give the conversion of 2,4-dinitrochloro-benzene to 2,4-dinitro phenylhydrazine. **2**

24. a) Classify the following into ortho, para and meta orienting groups on the benzene ring.
    i) $-NH_2$ ii) $-NO_2$ iii) $-OH$ iv) $-CHO$ **4**

    b) Write the structure of benzyne. **2**

02/11/22

DCMT 201

II Semester B.Sc. Examination, October/November 2022
(NEP Scheme)
MATHEMATICS – II
Algebra – II and Calculus – II

Time : 2½ Hours | Max. Marks : 60

Instruction *: Answer* ***all*** *the Parts.*

PART – A

I. Answer **any six** of the following : **(6×2=12)**

1) Let G be a group and $*$ is defined by $a * b = \frac{ab}{7}$, prove that G is an abelian.
2) Define order of an element.
3) Verify $\frac{\partial^2 f}{\partial x \partial y} = \frac{\partial^2 f}{\partial y \partial x}$, given $u = x^2 + y^2$.
4) If $u = 3x + 5y$, $v = 4x - 3y$, show that $\frac{\partial(u,v)}{\partial(x,y)} = -29$.
5) Evaluate $\int_0^{\frac{\pi}{2}} \cos^5 x \, dx$.
6) Evaluate $\int_0^{\frac{\pi}{2}} \sin^6 x . \cos^3 x \, dx$.
7) Evaluate $\int_{(0,1)}^{(2,5)} (3x + y)\,dx + (2y - x)\,dy$ along the curve $y = x^2$.
8) Evaluate $\int_1^2 \int_0^3 y \, dx \, dy$.

PART – B

II. Answer **any three** of the following : **(3×4=12)**

1) Show that $G = \{2, 4, 6, 8\}$ is an abelian group $(Z_{10}, \otimes_{10})$.
2) Find the number of generators of cyclic groups of order (i) 6 (ii) 8.

P.T.O.

3) State and prove Lagrange's theorem.

4) Let G be a group for any three subsets H, K, L. Prove that (HK)L = H(KL) when HK = {hk|h ∈ H, k ∈ K}.

5) Find the right cosets of the subgroup H = {0, 3} in the group $(Z_6, +_6)$.

PART – C

III. Answer **any three** of the following : **(3×4=12)**

1) If u = xy + yz + zx, show that $\frac{\partial u}{\partial x} + \frac{\partial u}{\partial y} + \frac{\partial u}{\partial z} = 2(x + y + z)$.

2) State and prove Euler's theorem for homogenous functions of x and y.

3) Find $\frac{du}{dt}$, if $u = e^x \sin y$, where $x = \log t$, $y = t^2$.

4) By using Maclaurin's expansion, expand $y = e^x \cos y$ upto second degree.

5) If u = x + y + z, v = y + z, w = z, show that $\frac{\partial(u, v, w)}{\partial(x, y, z)} = 1$.

PART – D

IV. Answer **any three** of the following : **(3×4=12)**

1) Obtain the reduction formula for $\int \sin^n x \, dx$ where n is the positive integer.

2) Evaluate $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \cos^6 x \, dx$.

3) Evaluate $\int_0^{\pi} x \sin^7 x \, dx$.

4) Show that $\int_0^{\pi} x \sin^4 x \cos^2 x \, dx = \frac{\pi^2}{32}$.

5) Evaluate $\int_0^4 x^3 \sqrt{4x - x^2} \, dx$.

PART – E

V. Answer **any three** of the following : **(3×4=12)**

1) Evaluate $\int_C xy\,dx$ around the circle $x^2 + y^2 = 1$.

2) Evaluate $\int_0^2 \int_1^2 (x^2 + y^2)\,dx\,dy$.

3) Evaluate $\int_0^1 \int_{x^2}^{x} (x^2 + 3y + 2)\,dy\,dx$.

4) Evaluate $\int_0^a \int_0^a \int_0^a (x^2 + y^2 + z^2)\,dx\,dy\,dz$.

5) Prove that $\int_0^3 \int_0^2 \int_0^1 xyz\,dx\,dy\,dz = \frac{9}{2}$.

DCBT 201

II Semester B.Sc. Examination, Oct./Nov. 2022
(NEP Scheme)
Paper – II : BIOTECHNOLOGY
Microbiological Methods

Time : 2½ Hours Max. Marks : 60

Instruction : ***Draw*** *neat labelled diagram* ***wherever*** *necessary.*

SECTION – A

I. Write short answers on the following : **(5×2=10)**

1) Magnification.
2) Disinfectant.
3) Selective media.
4) HEPA.
5) Antifungal agents.

SECTION – B

II. Answer **any four** of the following : **(4×5=20)**

6) Explain the working principle and application of chromatography.
7) Write a note on maintenance and preservation of culture.
8) What is sterilization ? Comment on radiation method.
9) Explain disc and agar well diffusion methods.
10) Describe the principle and the procedure involved in structural staining.

SECTION – C

III. Answer **any three** of the following : **(3×10=30)**

11) With neat labeled diagram, explain the principle and construction of electron microscope.
12) Explain chemical method of sterilization.
13) Define culture media. Comment on the culture media used in microbial growth.
14) Explain mode of action of antibacterial and antifungal assessment.
15) Enumerate the principle and application of spectrophotometer.

DCCN 201

II Semester B.Sc. Degree Examination, October/November 2022
(NEP Scheme)
CLINICAL NUTRITION AND DIETETICS
Paper : DSC 4 – Human Physiology

Time : 2½ Hours | Max. Marks : 60

PART – A

I. Answer **any 6** of the following. **(6×1=6)**

1) Group of cells : tissue :: group of tissue :
2) Define semi permiability.
3) What is passive transport ?
4) Give 2 cell organelles present only in plants.
5) What is protoplasam ?
6) Define epitope.
7) What is homeostasis ?
8) Male sex hormone : androgen :: female sex hormone :

PART – B

II. Answer **any 6** of the following. **(6×2=12)**

1) What is intercellular communication ?
2) What is exocytosis ?
3) Mention the muscle proteins.
4) Write a note on menopause.
5) Draw a neat labelled diagram of neuron.
6) List the primary functions of respiratory system.
7) Mention the antigen and antibodies in blood group A and B.
8) List few neurotransmitters.

P.T.O.

PART – C

III. Answer **any 3** of the following. **(3×4=12)**

1) Explain the mechanism of hunger.

2) Write a note on urine formation.

3) Brief note on oxygen transport.

4) List out the functions of plasma protein.

PART – D

IV. Answer **any 6** of the following. **(5×6=30)**

1) Write a note on antigens.

2) Explain conduction of nerve impulses.

3) Give a brief account on physiology of digestion.

4) Discuss in detail the components of blood.

5) Brief on the food intake mechanism.

6) Illustrate the mechanism of fertilization.

7) Discuss the ultra structure of skeletal muscle.

8) State the composition and function of CSF.

DCPH 201

II Semester B.Sc. Degree Examination, Oct./Nov. 2022
(NEP Scheme)
PHYSICS
Electricity and Magnetism

Time : 2½ Hours Max. Marks : 60

Instruction : ***Use*** *of non-programmable calculators is* ***permitted.***

PART – A

Answer **any six** questions. **Each** question carries **one** mark : **(1×6=6)**

1. What is a gaussian surface ?
2. Give the relation between electric field and electric potential at a point.
3. Why is an HTG preferable to a tangent galvanometer to measure currents ?
4. What is meant by critical damping ?
5. What is the internal resistance of an ideal current source ?
6. What is meant by wattless current ?
7. What are persistent currents in relation to a super conductor ?
8. Define the term "retentivity".

PART – B

Answer **any six** questions. **Each** question carries **two** marks : **(2×6=12)**

9. What is an electric dipole ? What will be the dipole moment of a dipole whose arm is zero ?
10. What is the physical significance of the gradient of a scalar function ?
11. How do you determine the Thevenin resistance of a circuit ?

P.T.O.

12. The distance between the plates of a parallel plate capacitor is d. If a metal plate of thickness $\frac{d}{2}$ is introduced between the plates, how does the capacitance change ?

13. Define mutual inductance between a pair of coils.

14. What are true power and virtual power as applied to ac circuits. What is the significance of the ratio of true power to apparent power ?

15. How does an accelerated charge produce electromagnetic waves ?

16. Classify hard and soft magnetic materials.

PART – C

Answer **any three** questions. **Each** question carries **four** marks : **(3×4=12)**

17. In a certain region the electrostatic potential is given by the expression $V = 4x^2 + 3y^2 - 12z^2$. What is the electric intensity at a point (1, 2, 4) in this region ?

18. An ebonite plate (K = 3) 6 mm thick is introduced between the parallel plates of a capacitor of plate area $2 \times 10^{-2}\ m^2$ and plate separation 0.01 m. Find the capacitance.

19. The ac voltage and current in a circuit are given by $e = 110 \sin(\omega t + \pi/6)$ and $i = 5 \sin(\omega t - \pi/4)$respectively. Find the impedance and the average power dissipated in the circuit.

20. Approximately how large must be the magnetic induction, for the orientational energy to be comparable to the thermal energy at room temperature. Assume $\mu_m = 5\mu_B$.

PART – D

Answer **any five** questions. **Each** question carries **six** marks : **(5×6=30)**

21. Obtain an expression for the electric field due to an infinite sheet of charge. **6**

22. State and prove the Norton's theorem. **6**

23. What are polar dielectrics ? Obtain an expression for the Gauss law in the presence of a dielectric. **(1+5=6)**

24. Obtain the relation $\sigma = \frac{ne^2\tau}{m}$ where the symbols have their usual significance.

    Mention one limitation of ohm's law. **(5+1=6)**

25. Obtain an expression for the magnetic field due to an infinitely long straight current carrying conductor at a point near one end. **6**

26. Obtain an expression for impedance of an L-R circuit supplied with an ac voltage $e = e_0 \sin\omega t$ using the j operator method. What are half power frequencies ? **(5+1=6)**

27. Derive the Maxwell's electromagnetic equations : $\nabla.B = 0$ and $\nabla \times E = -\frac{\partial B}{\partial t}$. **(3+3=6)**

28. a) Compare and contrast the different types of magnetic materials. **(2+4=6)**

    b) Mention any two properties and two applications of hard and soft magnetic materials.

OECN – 201

II Semester AII UG Courses Degree Examination, October/November 2022
(NEP Scheme)
Paper : OE2 – FOOD SAFETY AND HYGIENE (Open Elective)

Time : 2½ Hours | Max. Marks : 60

PART – A

I. Answer **any 6** of the following. **(6×1=6)**

1) Food spoilage and Food contamination both are different (True/False)
2) What is codex Alimentarius ?
3) Mixing water with milk is _____ adulteration.
4) Mention any 2 examples for food borne illness.
5) What is Food hazard ?
6) Where the FAO and WHO headquartered.
7) List out some food varieties belongs to group of High-risk foods.
8) Hair in Food : Incidental Adulteration :::: Water in Milk : _____

PART – B

II. Answer **any 6** of the following. **(6×2=12)**

1) What is food spoilage ? Mention some easy spoiling foods.
2) What is FSSAI ? Write on it.
3) Expand the following.
   a) PFA b) FPO c) FAO d) WHO
4) Mention some advantages of food safety.
5) Differentiate use by date and best before date.
6) What are the biocontrol methods of food preservation ?
7) Brief on FIFO.
8) Explain Food hazards.

P.T.O.

PART – C

III. Answer **any 3** of the following. **(3×4=12)**

1) List out the National and International Food Laws.

2) Write on the Codex Alimentarius.

3) Define PFA and its objectives.

4) Write on the following.
   a) FPO
   b) Cross contamination.

PART – D

IV. Answer **any 6** of the following. **(5×6=30)**

1) Define Food Hazards. Explain different types of hazards in foods.

2) Elaborate on Thermal transfer method of food preservation.

3) Explain any 2 National Food Laws and Agreements.

4) What is Food Preservation ? Write on the classification. List out the preservative names those have permissible limits to use in food products.

5) Write details on types of contaminants.

6) Explain any 2 food borne infections.

7) Write on the following.
   a) Protective clothing
   b) Food irradiation.

8) Illustrate on principles and importance of food safety.

AEML – 202

II Semester B.Sc./B.Sc.(FAD) Examination, October/November 2022
(NEP)
MALAYALAM LANGUAGE (Paper – II) (Part – I)

Time : 2½ Hours | Max. Marks : 60

SECTION – A

I. **എല്ലാ** ചോദ്യങ്ങൾക്കും **ശരിയായ** ഉത്തരം തെരഞ്ഞെടുത്തെഴുതുക. **(5×1=5)**

1) ഉഷയുടെ കാമുകൻ ആര് ?
   1) ദണ്ഡകൻ 2) അനിരുദ്ധൻ
   3) നന്ദൻ 4) ഗണേഷൻ

2) ലീലയുടെ രചയിതാവ് ആര് ?
   1) കുമാരനാശാൻ 2) കുഞ്ചൻ നമ്പ്യാർ
   3) ഉള്ളൂർ 4) വള്ളത്തോൾ

3) വിമലയുടെ കാമുകൻ.
   1) അമർസിംഗ് 2) സുധീർ കുമാർ മിശ്ര
   3) ഗണേഷ് 4) നന്ദൻ

4) ''ഏകാകിയായി പ്രിയനിരിക്കുമിടത്തിലൊന്നു
   പോകാൻ ഭവാനനുവദിക്കണമിപ്പൊഴെന്നെ'' – ആരുടെ വാക്കുകളാണിവ ?
   1) ഉഷ 2) അനിരുദ്ധൻ
   3) ഉഷയുടെ പിതാവ് 4) രാജാവ്

5) ലീലയുടെ തോഴി.
   1) മാധവി 2) അനസൂയ
   3) പ്രിയതമ 4) തിലോത്തമ

II. ഏതെങ്കിലും **അഞ്ചെണ്ണ**ത്തിന് ഉത്തരമെഴുതുക. **(5×3=15)**

1) ''വിരവിനൊടു പതിച്ചു, പിച്ചിമേൽ
   വിരളനവാംബുദ ബിന്ദുവെന്നപോൽ''

2) ''സ്ത്രീരത്നമേ, ഭവതി ബന്ധനമേറ്റ കുറ്റ –
   ക്കാരന്റെ സന്നിധിയിലെങ്ങനെ വന്നു ചേർന്നു''

3) ''പ്രിയവാദിനി, നിന്നൊടാ ചിര –
   പ്രിയതൻ പോന്നു വരാഞ്ഞതെന്തവൻ''

4) ''ഹേ കാര്യമേദിനി, യശോധനനാം നൃപന്നു
   ലോകാപവാദമഖിലോപരി ഗണ്യമല്ലീ''

P.T.O.

5) ''നിയതം കരുതി കിരാതിമാർ
സ്വയമോരും സഖി, സത്യമാരുമേ''

6) ''ഈടാർന്നു വാഴ്കുമനുരാഗനദിക്കു വിഘ്നം
കൂടാതെഴുക്കനുവദിക്കുകയില്ല ദൈവം''

7) ''അരുളും ഭ്രമമൊന്നു-കാൺകിൽ നിൻ –
തിരുമെയ് സുന്ദരി, നാരിമാർക്കുമേ''

8) ''തെറ്റതയും സദയമിങ്ങു പൊറുത്തു, നൃക്കാ
ലറ്റത്തെനിക്കനുവദിക്കുക നിത്യദാസ്യം''.

SECTION – B

III. ഏതെങ്കിലും **അഞ്ചെണ്ണ**ത്തിന് ഉത്തരമെഴുതുക. **(5×4=20)**

1) സമാസം എന്നാലെന്ത് ? ഉദാഹരണസഹിതം വിവരിക്കുക.
2) സുധീർകുമാർ മിശ്ര എന്ന കഥാപാത്രം.
3) ബന്ധനസ്ഥനായ അനിരുദ്ധന്റെ അവസ്ഥ വിവരിക്കുക.
4) ലീലയുടെ ബാല്യകാലജീവിതം വിവരിക്കുക.
5) സന്ധി എന്നാലെന്ത് ? വിവരിക്കുക.
6) വിമലയുടെ പിതാവിനെക്കുറിച്ച് വിവരിക്കുക.
7) ഉഷയുടെ പിതാവ് എന്ന കഥാപാത്രം.
8) ലീലയ്ക്ക് ഒരാസ്വാദനമെഴുതുക.

SECTION – C

IV. ഏതെങ്കിലും **നാലെണ്ണ**ത്തിന് ഉത്തരമെഴുതുക. **(4×5=20)**

1) ഉഷയുടെ പിതാവിന്റെ പ്രതികരണം എന്തായിരുന്നു ?
2) ലീലയുടെ പിതാവ് എങ്ങനെയെല്ലാം മകളെ സംരക്ഷിച്ചു ?
3) വിമലയുടെ സഹോദരങ്ങളെക്കുറിച്ച് വിവരിക്കുക.
4) അനിരുദ്ധനും, ഉഷയും തമ്മിലുള്ള പ്രണയം.
5) മദനനെക്കുറിച്ച് മലയത്തികൾ നൽകിയ അറിവുകൾ എന്തെല്ലാം ?
6) വിമലയുടെ അമ്മയുടെ ജീവിതം വിവരിക്കുക.

AESK – 202

II Semester B.Sc./B.C.A. Examination, October/November 2022
(NEP)
LANGUAGE SANSKRIT (Paper – II)
Vetala Panchavimshathi Grammer And Translation

Time : 2½ Hours Max. Marks : 60

Instructions : *a) Answer in **English**, **Kannada** or **Sanskrit**.*
*b) Question No. **V** should be answered in **Sanskrit** only.*

I. संस्कृतभाषायामेव उत्तराणि चिनुत। **(10×1=10)**

1) वेतालं कः आनीतवान् ?
अ) बल्लालसेनः आ) शूरसेनः इ) चण्डसेनः ई) त्रिविक्रमसेनः

2) सोमप्रभायाः पिता
अ) विष्णुस्वामी आ) हरिस्वामी इ) शिवस्वामी ई) गृहस्वामी

3) यशकेतोः राजधानी
अ) विलासवती आ) हैमवती इ) शोभवती ई) गुणवती

4) मदनसुन्दर्याः पिता
अ) शुद्धपाटः आ) शुद्धाम्बरः इ) शुद्धमानसः ई) शुद्धपण्डितः

5) ताम्रलिप्तेः राजा
अ) चण्डसिंहः आ) शुरसिंहः इ) गजसिंहः ई) राजसिंहः

6) सत्वशीलः राजानं _____ अदात्
अ) आम्रफलं आ) काश्मीरफलं इ) कदलीफलं ई) आम्लफलं

7) सप्तम कथायां सा सुन्दरी का ?
अ) राजकत्या आ) देवकत्या इ) असुरनन्दिनी ई) मनुजसुता

8) राक्षस्य नाम किं ?
अ) कालनेमिः आ) अरिष्टनेमिः इ) श्वेतनेमिः ई) कुलनेमिः

9) अष्टम कथायां जनपदस्य नाम किं ?
अ) कालघट्टः आ) वृक्षघट्टः इ) वृक्कघट्टः ई) दारुघट्टः

10) अष्टम कथायां द्विजस्य नाम किं ?
अ) चण्डस्वामी आ) विष्णुस्वामी इ) भूतस्वामी ई) वीरस्वामी

P.T.O.

II. 1) **एकस्य** दीर्घप्रबन्धं लिखत। **(10×1=10)**

ಒಂದರ ದೀರ್ಘ ಪ್ರಬಂಧವನ್ನು ಬರೆಯಿರಿ.

Write an essay on **any one** of the following.

अ) सोमप्रभाया: कथां लिखत।

ಸೋಮಪ್ರಭೆಯ ಕಥೆಯನ್ನು ಬರೆಯಿರಿ.

Write the story of Somaprabha.

अथवा

विष्णुस्वामिन: वृत्तान्तं लिखत।

ವಿಷ್ಣುಸ್ವಾಮಿಯ ವೃತ್ತಾಂತವನ್ನು ಬರೆಯಿರಿ.

Write the episode of Vishnuswami.

2) लघुटिप्पणीं रचयत (**द्वयो:**)। **(2×5=10)**

ಎರಡರ ಲಘು ಟಿಪ್ಪಣಿಯನ್ನು ಬರೆಯಿರಿ.

Write short notes on **any two** of the following.

अ) धवल:

आ) त्रिविक्रमसेन:

इ) सत्वशील:

ई) वेतालपञ्चविंशति:।

III. **एकस्य** अनुवादं **कन्नड** भाषायां, **आङ्ग्ल** भाषायां वा कुरुत। **(1×8=8)**

ಒಂದನ್ನು ಕನ್ನಡ ಅಥವಾ **ಆಂಗ್ಲ** ಭಾಷೆಯಲ್ಲಿ ಅನುವಾದಿಸಿ.

Translate **any one** passage to **Kannada** or **English**.

अथ लग्नं सम्प्राप्य स शुद्धपाटस्तस्मै धवलाय तुलयां सुन्दरीं सुतां प्रादात्। स च कृतीद्धाह: दर्शनरक्तया तथा भार्यया साकं कृतार्थ: पितुर्गृहमगात्। कदाचित् सुखस्थितस्य तस्य खशुरात्मज: मदनसुन्दर्या: सहोदर: समागात्। स चागत्य सर्वै: पृष्टकुशलोदन्त: स्वस्त्रा च समाश्लिष्य अभिनन्दित: विश्रान्त: प्रावदत्- "अहं मदनसुन्दर्या जामातुश्च निमन्त्रणार्थं तातेन प्रेषितोऽस्मि"

अथवा

सच तदाकर्ण्य उद्भ्रान्त: स्वयमेत्य तं ददर्श, पप्रच्छ च सन्तवयन् - "किमिदं ब्रूहि सखे। त्वं क्व प्रथित: ? क्व च प्राप्त: ? क्व आस्था: ? क्व च पतित: ?" इति। तदाकर्ण्य स तस्मै सर्वं वृत्तान्तं अशंसत्। राजा व्यचिन्तयत् - "हन्त! वीरोऽयं मदर्थं कोपेनैव विडम्बित:। तदिदानीम- स्याडडनृण्यं लब्धुमयमवसरो मया प्राप्त:" इति चिन्तयित्वा स राजा तं जगाद - "सखे! मुधा शोकं मुञ्च, अहं त्वां तेनैव मार्गेण नीत्वा तामसुरकन्यां प्रापयामि" इति उक्त्वा स्नानादिना तं समाश्वासयत्।

IV [illegible] (3×4=12)

Explain with reference to context **any three**

a) [illegible]

b) [illegible]

c) [illegible]

d) [illegible]

e) [illegible]

V 1) [illegible] (1×5=5)

a) [illegible]

b) [illegible]

c) [illegible]

d) [illegible]

e) [illegible]

f) [illegible]

g) [illegible]

h) [illegible]

2) [illegible] (1×5=5)

Translate to **Sanskrit**

[illegible]

A certain old man was planting a mango sapling. Seeing this an young man made fun of him. 'Old man! You will be dead by the time this plant becomes a tree. What is the use of this to you ?' The old man said smilingly. 'This is not for me. When you grow up I am planting this for you to eat the fruit.'

AETM – 202

II Semester B.Sc./B.Sc.(FAD) Examination, October/November 2022
(NEP)
TAMIL LANGUAGE (Part – I) (Paper – II)

Time : 2½ Hours | Max. Marks : 60

SECTION – A

I. அனைத்து வினாக்களுக்கும் சரியான விடையைத் தேர்ந்தெடுத்து எழுதுக. (5×1=5)

1) ஆழ்வார்கள் பாடிய பாடல்களின் தொகுப்பு
   1) இராமாயணம் 2) பெரிய புராணம்
   3) நாலாயிரதிவ்ய பிரபந்தம் 4) மகாபாரதம்

2) மணிமேகலைக் காப்பியத்தில் இத்தனை காதைகள் உள்ளன
   1) 40 2) 20
   3) 25 4) 30

3) இவற்றில் எது பண்புத்தொகை ?
   1) பைந்தமிழ் 2) பவளவாய்
   3) விளைநிலம் 4) அண்ணன் தம்பி

4) மீனாய்ப் பிறக்கும் விதியுடையேன் ஆவேனே-என்று பாடியவர்
   1) பெரியாழ்வார் 2) குலசேகர ஆழ்வார்
   3) திருமங்கையாழ்வார் 4) நம்மாழ்வார்

5) தேவராசப் பிள்ளை அவர்களால் இயற்றப்பட்ட நூல்
   1) குசேலோ பாக்கியானம் 2) ஏர் எழுபது
   3) வில்லிபாரதம் 4) கார்நாற்பது

II. எவையேனும் ஐந்திற்கு இடம்சுட்டிப்பொருள் விளக்கம் தருக. (5×3=15)

1) இப்பாத்திர தானமும் பைந்தொடி செய்தியும்
   யாப்புடைத்தாக இசைத்தும் என்று ஏகி

2) ஆரம் பரித்த முத்தம் கோப்போர்
   சரம் புலர்ந்த சாந்தம் திமிர்வோர்

3) எளியனேன் மறையோர் தங்குலத்து உதித்தேன்

4) கூனமரும் விற்புருவக் குயிலமரும் மென்மொழியாள்
   தேனமருந் தார்மார்பன் செங்கை பிடித்துத் தடுத்தாள்

P.T.O.

5) கானாறாய்ப் பாயும் கருத்து உடையேன் ஆவேனே !

6) உங்கள் பணியில் நான் ஒரு போதும்
குறுக்கிடவில்லை. என் பாதையில் உங்கள்
தலையீடும் தேவையற்றது

7) இனிமேல் நம்முடைய போராட்டத்தைத்
தீவிரப்படுத்தணும்

8) பல இரவுகளாய், அந்த ஓர் இரவு
நீடித்து அவனைத்துன்புறுத்தியது

SECTION – B

III. எவையேனும் ஐந்திற்குச் சுருக்கமான விடை தருக. **(5×4=20)**

1) சொல் என்றால் என்ன ? சான்றுடன் விளக்குக.

2) தெரிநிலை வினைமுற்றைச் சான்றுடன் கூறுக.

3) தற்சமம், தற்பவம்-இவற்றை விளக்குக.

4) உரிச்சொற்களைச் சான்றுடன் விளக்குக.

5) உண்டி கொடுத்து உயிர் அறம் போற்றிய மணிமேகலையின் செயல் குறித்து எழுதுக.

6) குலேசன் மரக்கலம் ஓட்டியிடம் வேண்டுவன யாவை ?

7) சிமனின் போர்க் குணத்தை 'ஆத்தங்கரை ஓரம்' வழி விளக்குக.

8) பெரிய அணைகளைக் கட்டுவதால் ஏற்படும் பாதிப்புகளை வெ.இறையன்பு வழி நின்று விளக்குக.

SECTION – C

IV. எவையேனும் நான்கு வினாக்களுக்கு விடை தருக. **(4×5=20)**

1) மணிமேகலை சோழ மன்னனிடம் வேண்டிக் கொண்டனவற்றை விளக்கி வரைக.

2) கண்ணன், குசேலனை உபசரித்த முறை குறித்து எழுதுக.

3) குலசேகர ஆழ்வார், திருமாலிடம் வேண்டிக்கொள்ளும் குருகு, மீன் பிறவிகள் குறித்து எழுதுக.

4) சுதீர் பாத்திரப் படைப்பை 'ஆத்தங்கரை ஓரம்' வழிநின்று விளக்குக.

5) கோவிந்த் பாயின் குணநலம் குறித்து எழுதுக.

6) அரசு அதிகாரிகளின் போக்கினை வெ. இறையன்பு வழி விளக்குக.

AEHI – 202

II Semester B.Sc. Examination, October/November 2022
(NEP Scheme)
HINDI
Kavya, Anuwad and Prayojanmulak Hindi

Time : 2½ Hours | Max. Marks : 60

I. निम्नलिखित प्रश्नों के उत्तर **एक शब्द** या **वाक्यांश** में लिखिए । **(10×1=10)**

1) कबीरदास की भक्ति साधना में किसकी महत्ता है ?
2) कृष्ण भक्ति काव्य धारा के प्रसिद्ध कवयित्री कौन थी ?
3) ''गिरधर'' शब्द का अर्थ क्या है ?
4) ''भारत महिमा'' कविता के कवि कौन है ?
5) छायावादी काव्य की एक प्रमुख विशेषता बताइए ।
6) बसन्त कब गूँजता है ?
7) सिपाही के मन में क्या चाह होता है ?
8) नींद में डूबे समाज को क्या करना चाहिए ?
9) मुसाफिर को क्या करना चाहिए ?
10) कवि किसे बार-बार आने के लिए बुला रहा है ?

II. निम्नलिखित अवतरणों में किन्हीं **दो** का व्याख्या कीजिए । **(7×2=14)**

1) ''गौतम एक बार फिर आओ
बारूद के ढेर पर विश्व खड़ा है देखो
कितने उन्नत आयाम छुए है हमने
अपने संहारक आप बने है देखो''

2) कबीर सुमिरण सार है, और सकल जंजाल ।।
आदि अन्त सब सोधिया दूजा देखौ काल ।।

3) आशा मिटी, कामना टूटी
बिगुल बज पड़ी पार
मैं हूँ एक सिपाही पथ दे,
खूला देख वह द्धार !

P.T.O.

III. किसी **एक** कविता का सार लिखिए । **(1×16=16)**

1) मीराबाई श्रीकृष्ण के लिए समाजिक मर्यादों को किस प्रकार तोडते हुए भगवान कृष्ण के प्रति अपनी भक्ति-भावना प्रकट करती है ?

अथवा

2) ''मौन निमंत्रण'' कविता का सार लिखकर विशेषताएँ बताइए ।

IV. किसी **एक** कविता का सार संक्षिप्त में लिखिए । **(5×1=5)**

1) एक बार फिर आओ ।

2) सिपाही ।

V. व्याकरण भाग (किन्हीं **दो** प्रश्नों के उत्तर लिखिए) । **(4×2=8)**

1) अनुवाद किसे कहते हैं ? ''उदाहरण के साथ स्पष्ट कीजिए ।

2) प्रयोजन मूलक हिन्दी का अर्थ लिखिए ।

3) प्रयोजन मूलक हिन्दी का अर्थ क्या है ? उदाहरण कीजिए ।

VI. **हिन्दी** में अनुवाद कीजिए । **(1×7=7)**

Union Minister said the goal of the government is to bring a smile on the face of the poor. Feed every hungry person, provide jobs to every unemployed and ensure that development touches and covers every family in the country. Union Minister is inaugurated the second stage of Ujjvala gas plan the good of He said that the government is restlessly working on the goal of self relent India. To full fill the goal the government designed such policies that would improve the standard of living of the poor.

ಬಡವರ ಮುಖದಲ್ಲಿ ಮಂದಹಾಸ ತರುವುದು ಕೇಂದ್ರ ಸರ್ಕಾರದ ಉದ್ದೇಶವಾಗಿದೆ ಎಂದು ಕೇಂದ್ರ ಸಚಿವರು ಹೇಳಿದರು. ಪ್ರತಿಯೊಬ್ಬ ವ್ಯಕ್ತಿಯ ಹಸಿವು ನೀಗಿಸುವುದು, ನಿರುದ್ಯೋಗಿಗೆ ಉದ್ಯೋಗ ನೀಡುವುದರಿಂದ ದೇಶದ ಪ್ರತಿಯೊಂದು ಕುಟುಂಬಕ್ಕೆ ಅಭಿವೃದ್ಧಿಯ ಸ್ಪರ್ಶ ನೀಡಿದಂತಾಗುತ್ತದೆ ಎಂದರು. ಉಜ್ವಲ್ ಗ್ಯಾಸ್ ಯೋಜನೆಯ ಎರಡನೇ ಹಂತದ ಕಾರ್ಯಕ್ರಮ ಉದ್ಘಾಟಿಸಿ ಮಾತನಾಡಿದ ಅವರು ಭಾರತ ಸರ್ಕಾರವು ''ಆತ್ಮ ನಿರ್ಭರ ಭಾರತ'' ಮಾಡಲಿಕ್ಕೆ ಸತತ ಪ್ರಯತ್ನ ಮಾಡುತ್ತಿದೆ ಎಂದರು. ಈ ಉದ್ದೇಶ ಯಶಸ್ವಿಗೊಳಿಸಲು ಸರ್ಕಾರವು ಅನೇಕ ಯೋಜನೆಗಳನ್ನು ಜಾರಿಗೆ ತಂದಿದೆ ಇದರಿಂದ ಬಡವರ ಜೀವನ ಮಟ್ಟದಲ್ಲಿ ಸುಧಾರಣೆಯಾಗುವುದು ಎಂದರು.

AETL – 203

II Semester B.Sc./B.Sc.(FAD)/B.Sc.(Forensic) Degree Examination, October/November 2022
(NEP Scheme)
TELUGU LANGUAGE (Paper – II)
Old Poetry and Short Stories

Time : 2½ Hours | Max. Marks : 60

Instruction : ***All*** *questions are* ***compulsory***.

I. ఈ క్రింది ప్రశ్నలకు **సరియైన** సమాధానాలను రాయండి. **(10×1=10)**

1) స్త్రీవాదంలో తొలి కవిత ఏది ?
   A) ఇసుర్రాయి
   B) నీలి మేఘాలు
   C) జానకీ విముక్తి
   D) ప్రతి స్త్రీ ఒక నిర్మల కావాలి

2) భక్త రామదాసు ఎవరి బిరుదు ?
   A) మారన
   B) కంచర్ల గోపన్న
   C) ధూర్జటి
   D) గోపి

3) దళిత సాహిత్యం అనే పదం వ్యవహారంలోకి వచ్చిన సంవత్సరం
   A) 1931 నుండి
   B) 1928 నుండి
   C) 1996 నుండి
   D) 1969 నుండి

4) పుట్టకపోవడం కన్నా పుట్టినచోట బతకలేకపోవడం దారుణం అన్నది ఎవరు ?
   A) బాజీ
   B) జావేద్
   C) అఫ్సర్
   D) దిలావర్

5) తొలి స్త్రీవాద రచయిత్రి
   A) ఓల్గా
   B) ముప్పాళ్ళ రంగనాయకమ్మ
   C) రేవతి దేవి
   D) రజని

6) ప్రథమాంధ్ర మహాపురాణం అని దేనినంటారు ?
   A) నృసింహ పురాణం
   B) మార్కండేయ పురాణం
   C) భీమేశ్వర పురాణం
   D) వరాహ పురాణం

7) సాహిత్య శ్రీపర అనే బిరుదు ఎవరిది ?
   A) బద్దెన
   B) ధూర్జటి
   C) కేతన
   D) మారన

P.T.O.

8) మొట్టమొదటి శతక కర్త ఎవరు ?

A) పాల్కురికి సోమన
B) మల్లికార్జున పండితుడు
C) నన్నెచోడుడు
D) ధూర్జటి

9) దాశరథీ కీర్తనలు ఎవరి రచన ?

A) క్షేత్రయ్య
B) త్యాగయ్య
C) కంచర్ల గోపన్న
D) అన్నమయ్య

10) తొలి తెలుగు దళిత కవిత ఏది ?

A) మాలవాండ్ర పాట
B) హరిజన నాటకం
C) తిరుగుబాటు
D) జాతర

II. ఈ క్రింది వాటిలో **మూడింటికి** లఘు ప్రశ్నలకు సమాధానములు వ్రాయునది. **(3×4=12)**

1) ఓల్గా.
2) భాస్కర శతకం.
3) ప్రాంతీయ వాదం.
4) మైనారిటీ కవిత్వం ప్రధానంగా మూడు రకాలుగా కన్పిస్తుంది.
5) ఇనాక్.
6) శతక లక్షలు.

III. ఈ క్రింది వాటిలో **మూడింటికి** లఘు ప్రశ్నలకు సమాధానములు వ్రాయునది. **(3×6=18)**

1) శ్రీకాళహస్తీశ్వర శతకం.
2) శతక వికాసం.
3) స్త్రీవాద కవిత్వం.
4) ప్రాచీన దళిత సాహిత్యం.
5) దాశరథి శతకం.
6) ప్రాంతీయ వాద చైతన్యం.

IV. ఈ క్రింది ప్రశ్నలలో **రెండింటికి** సంక్షిప్తంగా సమాధానాలు రాయండి. **(2×10=20)**

1) మైనారిటీ వాద సాహిత్యం గురించి వ్రాయునది.
2) భాస్కర శతకాన్ని విశదీకరించండి.
3) దాశరథి శతకంను తెల్పండి.
4) తెలుగులో దళిత నేపథ్యం తెల్పండి.

DCFS 203

Second Semester B.Sc. Degree Examination, October/November 2022
(NEP Scheme)
FORENSIC SCIENCE
Criminal Law

Time : 2½ Hours

Max. Marks : 60

PART – A

Answer **any 6** questions. **Each** question carries **1** mark. **(1×6=6)**

1. What is speedy trials ?
2. Define criminal justice system.
3. What is Actus Reus and Mens Rea ?
4. What is culpable homicide ?
5. Define arrest.
6. Expand FIR.
7. Define anticipatory bail.
8. Define burden of proof.

PART – B

Answer **any 6** questions. **Each** question carries **2** marks. **(2×6=12)**

9. What is arbitration and mediation ?
10. What is adversarial and inquisitorial system of CJS ?
11. Explain the Sections of rape and acid attack.
12. What is grievous hurt and murder ?

P.T.O.

13. Define charge.

14. What is summary trials ?

15. What is expert witness ?

16. Define cross examination and re-examination.

PART – C

Answer **any 3** questions. **Each** question carries **4** marks. **(4×3=12)**

17. Explain the reforms in Criminal Justice System (Malimath Committee Report).

18. Explain justifiable defenses (Section 96 – 106).

19. Explain search and seizure with or without a warrant and general provisions.

20. Explain Juvenile Justice Act, 2015 (Care and Protection of Children).

PART – D

Answer **any 5** questions. **Each** question carries **6** marks. **(6×5=30)**

21. Explain Alternative Dispute Resolution System (ADRS).

22. Explain fundamental elements in judicial functioning.

23. Explain offence against property.

24. Explain the principles of group liability.

25. Explain the hierarchy of courts in India and functionaries under the code.

26. Explain the Procedure of FIR.

27. Explain Section 32, Section 45, Section 46, Section 47, Section 57, Section 58, Section 60 of Indian Evidence Act.

DCMT 201

II Semester B.Sc. Examination, October/November 2022
(NEP Scheme)
MATHEMATICS – II
Algebra – II and Calculus – II

Time : 2½ Hours | Max. Marks : 60

***Instruction** : Answer **all** the Parts.*

PART – A

I. Answer **any six** of the following : **(6×2=12)**

1) Let G be a group and $*$ is defined by $a * b = \frac{ab}{7}$, prove that G is an abelian.
2) Define order of an element.
3) Verify $\frac{\partial^2 f}{\partial x \partial y} = \frac{\partial^2 f}{\partial y \partial x}$, given $u = x^2 + y^2$.
4) If $u = 3x + 5y$, $v = 4x - 3y$, show that $\frac{\partial(u,v)}{\partial(x,y)} = -29$.
5) Evaluate $\int_0^{\frac{\pi}{2}} \cos^5 x \, dx$.
6) Evaluate $\int_0^{\frac{\pi}{2}} \sin^6 x . \cos^3 x \, dx$.
7) Evaluate $\int_{(0,1)}^{(2,5)} (3x + y)\,dx + (2y - x)\,dy$ along the curve $y = x^2$.
8) Evaluate $\int_1^2 \int_0^3 y \, dx \, dy$.

PART – B

II. Answer **any three** of the following : **(3×4=12)**

1) Show that $G = \{2, 4, 6, 8\}$ is an abelian group $(Z_{10}, \otimes_{10})$.
2) Find the number of generators of cyclic groups of order (i) 6 (ii) 8.

P.T.O.

3) State and prove Lagrange's theorem.

4) Let G be a group for any three subsets H, K, L. Prove that (HK)L = H(KL) when HK = {hk|h ∈ H, k ∈ K}.

5) Find the right cosets of the subgroup H = {0, 3} in the group $(Z_6, +_6)$.

PART – C

III. Answer **any three** of the following : **(3×4=12)**

1) If u = xy + yz + zx, show that $\frac{\partial u}{\partial x}+\frac{\partial u}{\partial y}+\frac{\partial u}{\partial z}=2(x+y+z)$.

2) State and prove Euler's theorem for homogenous functions of x and y.

3) Find $\frac{du}{dt}$, if $u = e^x \sin y$, where $x = \log t$, $y = t^2$.

4) By using Maclaurin's expansion, expand $y = e^x \cos y$ upto second degree.

5) If u = x + y + z, v = y + z, w = z, show that $\frac{\partial(u,v,w)}{\partial(x,y,z)}=1$.

PART – D

IV. Answer **any three** of the following : **(3×4=12)**

1) Obtain the reduction formula for $\int \sin^n x\,dx$ where n is the positive integer.

2) Evaluate $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} \cos^6 x\,dx$.

3) Evaluate $\int_0^{\pi} x \sin^7 x\,dx$.

4) Show that $\int_0^{\pi} x \sin^4 x \cos^2 x\,dx = \frac{\pi^2}{32}$.

5) Evaluate $\int_0^4 x^3\sqrt{4x-x^2}\,dx$.

PART – E

V. Answer **any three** of the following : **(3×4=12)**

1) Evaluate $\int_C xy\,dx$ around the circle $x^2 + y^2 = 1$.

2) Evaluate $\int_0^2 \int_1^2 (x^2 + y^2)\,dx\,dy$.

3) Evaluate $\int_0^1 \int_{x^2}^{x} (x^2 + 3y + 2)\,dy\,dx$.

4) Evaluate $\int_0^a \int_0^a \int_0^a (x^2 + y^2 + z^2)\,dx\,dy\,dz$.

5) Prove that $\int_0^3 \int_0^2 \int_0^1 xyz\,dx\,dy\,dz = \frac{9}{2}$.

DCCN – 203

Second Semester B.Sc. Degree Examination, October/November 2022
(NEP Scheme)
CLINICAL NUTRITION
DSC 6 – Food Safety and Security

Time : 2½ Hours | Max. Marks : 60

PART – A

I. Answer **any 6** of the following. **(6×1=6)**

1) 'Radura' is logo of irradiated food. (True/False)
2) Expand the CAC.
3) Who is Designated Officer ?
4) Define GMP.
5) List out the global examples of new & emerging pathogens.
6) Mention any 4 commodities listed under Essential Commodities Act.
7) Where the FAO & WHO headquartered ?
8) Jaivik Bharat : Organic food ::::: FPO Mark :

PART – B

II. Answer **any 6** of the following. **(6×2=12)**

1) What is Food Spoilage ? How it's different from food contamination ?
2) Detail on the factors that affect food spoilage.
3) Expand the following.
   a) APEDA b) AGMARK c) GRAS d) JECFA
4) Define Food Adulteration. Explain the different types of food adulteration.
5) Write on nutrition and non-nutrition Indicators.
6) Differentiate between organic and non-organic food.
7) Brief on Food Safety. Mention the advantages.
8) What are organic foods ?

P.T.O.

PART – C

III. Answer **any 3** of the following. **(3×4=12)**

1) Write on functions of food analyst.

2) Write a note on Designated Officer.

3) What is Food Production? Explain its access, distribution and availability.

4) Write on the determinants of Nutritional status of individual and populations.

PART – D

IV. Answer **any 6** of the following. **(5×6=30)**

1) What is HACCP ? Explain the principles and applications.

2) Elaborate on Transgenic and GMO foods.

3) Explain any 2 National Food Laws and Agreements.

4) What is Preservative? Write on the classification. List out the preservative names those have permissible limits to use in food products.

5) Write details on ISI and AGMARK.

6) Sum up on the major nutritional problems.

7) Explain approaches and strategies for improving nutritional status and health.

8) What is the health based and food based interventions to improve the nutritional status ?

———————

DCPY 201

II Semester B.A./B.Sc. Examination, October/November 2022
(NEP Scheme)
PSYCHOLOGY – II
Foundations of Behaviour

Time : 2½ Hours | Max. Marks : 60

Instructions : 1) ***All three*** *Sections are* ***compulsory***.
2) ***All*** *answers must be written* ***completely*** *in either* ***Kannada*** *or* ***English***.

SECTION – A

ವಿಭಾಗ - ಎ

Answer **any 6** of the following questions. **Each** answer carries **2** marks. **(6×2=12)**

ಕೆಳಗಿನ ಯಾವುದಾದರೂ **6** ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. **ಪ್ರತಿ** ಉತ್ತರಕ್ಕೆ **2** ಅಂಕಗಳು.

1. What is emotion ?
   ಸಂವೇಗ ಎಂದರೇನು ?

2. Mention the responses to emotions.
   ಸಂವೇಗಗಳಿಗೆ ತೋರುವ ಪ್ರತಿಕ್ರಿಯೆಗಳನ್ನು ಹೆಸರಿಸಿ.

3. What are incentives ?
   ಉತ್ತೇಜಕಗಳು ಎಂದರೇನು ?

4. Mention biological motives.
   ಜೈವಿಕ ಅಭಿಪ್ರೇರಣೆಗಳನ್ನು ಹೆಸರಿಸಿ.

5. Mention the formula used to obtain IQ.
   ಬುದ್ಧಿಲಬ್ಧವನ್ನು ಕಂಡುಹಿಡಿಯುವ ಸೂತ್ರವನ್ನು ಬರೆಯಿರಿ.

6. What is social intelligence ?
   ಸಾಮಾಜಿಕ ಬುದ್ಧಿಶಕ್ತಿ ಎಂದರೇನು ?

P.T.O.

7. What is Thinking ?
   ಆಲೋಚನೆ ಎಂದರೇನು ?

8. Define personality.
   ವ್ಯಕ್ತಿತ್ವವನ್ನು ವ್ಯಾಖ್ಯಾನಿಸಿ.

9. What are projective techniques ?
   ಪ್ರಕ್ಷೇಪಣಾ ತಂತ್ರಗಳೆಂದರೇನು ?

SECTION – B

ವಿಭಾಗ - ಬಿ

Answer **any 4** of the following. **Each** answer carries **6** marks. **(4×6=24)**
ಕೆಳಗಿನ ಯಾವುದಾದರೂ **4** ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. **ಪ್ರತಿ** ಉತ್ತರಕ್ಕೆ **6** ಅಂಕಗಳು.

1. Explain the components of emotional intelligence.
   ಸಂವೇಗಾತ್ಮಕ ಬುದ್ಧಿಶಕ್ತಿಯ ಆಯಾಮಗಳನ್ನು ವಿವರಿಸಿ.

2. Describe motivational cycle.
   ಅಭಿಪ್ರೇರಣೆಯ ಚಕ್ರವನ್ನು ವಿವರಿಸಿ.

3. Explain crystallized and fluid intelligence.
   ಘನೀಕೃತ ಮತ್ತು ದ್ರವೀಕೃತ ಬುದ್ಧಿಶಕ್ತಿಯನ್ನು ವಿವರಿಸಿ.

4. Explain creative and critical thinking.
   ಸೃಜನಾತ್ಮಕ ಮತ್ತು ವಿಮರ್ಶಾತ್ಮಕ ಆಲೋಚನೆಯನ್ನು ವಿವರಿಸಿ.

5. Describe the process of concept formation.
   ಸಂಪ್ರತ್ಯಯ ರಚನೆಯ ಪ್ರಕ್ರಿಯೆಯನ್ನು ವಿವರಿಸಿ.

6. Describe the need for assessment of personality.
   ವ್ಯಕ್ತಿತ್ವ ಮಾಪನದ ಅವಶ್ಯಕತೆಯನ್ನು ವಿವರಿಸಿ.

SECTION – C

ವಿಭಾಗ - ಸಿ

Answer **any 3** of the following. **Each** answer carries **8** marks. **(3×8=24)**

ಕೆಳಗಿನ ಯಾವುದಾದರೂ **3** ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. **ಪ್ರತಿ** ಉತ್ತರಕ್ಕೆ **8** ಅಂಕಗಳು.

1. Describe the physiological theories of emotions.
   ಸಂವೇಗದ ಶಾರೀರಿಕ ಸಿದ್ಧಾಂತಗಳನ್ನು ವಿವರಿಸಿ.
2. Explain biological motives.
   ಜೈವಿಕ ಅಭಿಪ್ರೇರಣೆಗಳನ್ನು ವಿವರಿಸಿ.
3. Describe the factors theories of intelligence.
   ಬುದ್ಧಿಶಕ್ತಿಯ ಕಾರಕಾಂಶ ಸಿದ್ಧಾಂತಗಳನ್ನು ವಿವರಿಸಿ.
4. Explain the steps in problem solving.
   ಸಮಸ್ಯಾ ಪರಿಹಾರದ ಹಂತಗಳನ್ನು ವಿವರಿಸಿ.
5. Explain any two techniques to assess personality.
   ವ್ಯಕ್ತಿತ್ವವನ್ನು ಮಾಪನ ಮಾಡುವ ಯಾವುದಾದರೂ ಎರಡು ತಂತ್ರಗಳನ್ನು ವಿವರಿಸಿ.

DCEL 201

II Semester B.Sc. Examination, October/November 2022
(NEP Scheme)
ELECTRONICS
Paper – II : Analog and Digital Electronics

Time : 2½ Hours | Max. Marks : 60

Instructions : *1) Answer **all** the questions from Part – **A**, **any four** from Part – **B**, **any four** from Part – **C**.*
*2) Answer **all** the questions of Part – **A** in **any one** page, answering the **same** questions multiple times will **not** be considered for evaluation.*

PART – A

Answer **all** the sub-divisions. **(12×1=12)**

1. I) TRIAC is a device which conducts during
   a) Positive half cycles of the input signal
   b) Negative half cycles of the input signal
   c) Both positive and negative half cycles of the input signal
   d) Alternate positive half cycles of the input signal

   II) How many terminals are there in a unijunction transistor ?
   a) 1 b) 2 c) 3 d) 4

   III) An SCR has three terminals viz.
   a) Cathode, anode, gate b) Anode, cathode, grid
   c) Anode, cathode, drain d) None of the above

   IV) The Op-amp can amplify
   a) a.c. signals only b) d.c. signals only
   c) both a.c. and d.c. signals d) neither d.c. nor a.c. signals

   V) An oscillator employs _____ feedback.
   a) Positive b) Negative
   c) Neither positive nor negative d) Data insufficient

   VI) Astable multivibrator operating at 150Hz has a discharge time of 2.5m. Find the duty cycle of the circuit.
   a) 50% b) 75% c) 95.99% d) 37.5%

P.T.O.

VII) A 4-variable Karnaugh Map has
a) Eight cells b) Three cells
c) Sixteen cells d) Four cells

VIII) A half-adder is characterized by
a) two inputs and two outputs b) three inputs and two outputs
c) two inputs and three outputs d) two inputs and one output

IX) De-multiplexer has
a) one data input line, several data output lines and selection inputs
b) several data input lines, several data output lines and selection inputs
c) one data input line, one data output line and selection input
d) several data input lines, one data output line and selection inputs

X) When S and R are set to 1-logic, the SR flip-flop output becomes
a) Hold state b) Set state
c) Reset state d) Indeterminate state

XI) The number of flip-flops required for decade counter is
a) 3 b) 4 c) 5 d) 10

XII) A ring counter is a
a) Sequence generator b) Up counter
c) Down counter d) Decade counter

PART – B

Answer **any four** questions. **(4×7=28)**

2. a) With the help of equivalent circuit, explain the working of UJT. Draw its characteristics curves.
b) Draw the VI characteristics of an SCR. **(5+2)**

3. With a circuit diagram, explain the working of N channel enhancement type MOSFET.

4. a) Draw the circuit of an op-amp inverting amplifier and derive the expression for voltage gain.
b) Explain virtual ground. **(5+2)**

5. a) What is full adder ? Write the truth table and draw the logic circuit of full adder using logic gates.
   b) Draw the logic circuit of 2 to 4 decoder using AND gates. **(5+2)**

6. a) With a circuit diagram, explain the operation of a successive approximation type of ADC.
   b) Draw the logic circuit of 4 : 1 Multiplexer. **(5+2)**

7. Draw the logic diagram of a Master Slave JK flip-flop and explain its working with a truth table.

8. With a logic diagram, explain the working of 4-bit SISO shift register. Write its truth table and timing diagram.

PART – C

Answer **any four** questions. **(4×5=20)**

9. Design a low pass filter with a cut off frequency of 4KHz with a pass band gain of 2. Assume C = 0.01μF.

10. Draw an astable multivibrator, with R_1 = 1KΩ, R_2 = 100KΩ and C = 0.01μF. Calculate the T_{on}, T_{off}, frequency of oscillations and duty cycle.

11. Simplify the Boolean function f(a, b, c, d) = using K-map and draw the logic circuit using basic gates.

12. a) Express f(ABCD) = (A+C) (B+D) in standard POS form.
   b) Prove that (B) = A + B. **(3+2)**

13. Design Mod-5 counter using K-map.

27/10/22

DCCN 201

II Semester B.Sc. Degree Examination, October/November 2022
(NEP Scheme)
CLINICAL NUTRITION AND DIETETICS
Paper : DSC 4 – Human Physiology

Time : 2½ Hours | Max. Marks : 60

PART – A

I. Answer **any 6** of the following. **(6×1=6)**

1) Group of cells : tissue :: group of tissue :
2) Define semi permiability.
3) What is passive transport ?
4) Give 2 cell organelles present only in plants.
5) What is protoplasam ?
6) Define epitope.
7) What is homeostasis ?
8) Male sex hormone : androgen :: female sex hormone :

PART – B

II. Answer **any 6** of the following. **(6×2=12)**

1) What is intercellular communication ?
2) What is exocytosis ?
3) Mention the muscle proteins.
4) Write a note on menopause.
5) Draw a neat labelled diagram of neuron.
6) List the primary functions of respiratory system.
7) Mention the antigen and antibodies in blood group A and B.
8) List few neurotransmitters.

P.T.O.

PART – C

III. Answer **any 3** of the following. **(3×4=12)**

1) Explain the mechanism of hunger.

2) Write a note on urine formation.

3) Brief note on oxygen transport.

4) List out the functions of plasma protein.

PART – D

IV. Answer **any 6** of the following. **(5×6=30)**

1) Write a note on antigens.

2) Explain conduction of nerve impulses.

3) Give a brief account on physiology of digestion.

4) Discuss in detail the components of blood.

5) Brief on the food intake mechanism.

6) Illustrate the mechanism of fertilization.

7) Discuss the ultra structure of skeletal muscle.

8) State the composition and function of CSF.

AEEN 202

II Semester B.Sc./B.C.A. Examination, October/November 2022
(NEP Scheme)
ENGLISH (L2)
Generic English – II

Time : 2½ Hours | Max. Marks : 60

Instructions : *1) Answer **all** questions.*
*2) Write the question numbers correctly for **each** Section.*

SECTION – A

Workbook – 40 marks

I. Summarize the passage in **75-100** words and give a suitable title : **5**

This century is the age of science. We cannot imagine our lives sans Science. Science has become a part and parcel of our lives. Science has become a symbol of progress. The progress is in the field of medicine, education, industry, etc., and we enjoy the comforts of science in all fields. Science has developed an effective transport and communication system. Buses, cars, trains, planes have made transportation easy and comfortable, safe and fast. Man has even landed on the moon with the help of technology. In the field of medicine, science has worked wonders. Almost all kinds of diseases are entirely cured by modern drugs and medicines. Medicine has reduced pain and suffering. Electricity is another important scientific invention. The comforts of our life like electric lamps, refrigerators, fans , grinders, washing machines, etc. are all run by electricity.

Scientific methods of cultivation have solved the flood problem. The pests destroying the crops are killed immediately by pesticides. Poultry and sericulture are also improved. Thus, science is helpful in all walks of life and makes our life comfortable and happy.

II. Do as directed :

1) Sharp object should be disposed of in hard plastic or metal containers with secure lids. The containers should be clearly marked and be puncturing resistant.

a) Find a word in the above passage which means 'Tight'. **1**

b) Write antonym for the word 'Marked'. **1**

P.T.O.

2) Add appropriate prefix or suffix to the following words : 2

a) Resist

b) Remark.

3) Choose the appropriate word/phrase from brackets : 4

a) I turned _____ when I dropped the water _____ . (Pail/Pale)

b) Will the teacher give me a special _____ now that I'm on the honor _____ ? (role/roll)

III. Read the passage carefully and answer the questions given below : (1×5=5)

Comparisons of technology are often difficult to make, not only because of the rapid pace of improvements but also because of the many new applications that are available as time progresses. If we were to consider the contemporary graphing calculator and the calculation capacities of computing machines from fifty years ago, there would be astounding improvements between these two devices. However, the improvements are not reduced merely to speed improvements. A graphing calculator also has numerous output capacities that far exceed those available much older computers, none of which had the ability to represent their output in any manner even closely resembling that of contemporary devices. Merely consider the display capacities of such a device. These enable users to input many new kinds of information, enabling design engineers to design new hardware functions to match the new means of collecting user input.

The situation is even more obvious when one considers the numerous functions performed by a modern "smartphone". These devices are equipped with panoply of features. With all of these new functions come many new types of computational capabilities as well. In order to process images quickly, specialized hardware must be designed and software written for it in order to ensure that there are few issues with the phone's operation. Indeed, the whole "real time" nature of telecommunications has exerted numerous pressures on the designers of computing devices. Layers of complexity, at all levels of production and development, are required to ensure that the phone can function in a synchronous manner. Gone are the days of asynchronous processing, when the computer user entered data into a mainframe, only to wait for a period of time before the processing results were provided. Today, even the smallest of digital devices must provide seamless service for users. The effects of this requirement are almost beyond number.

Questions :

1) Why are the comparisons of technology often difficult ?
2) What is the special feature of graphing calculator ?
3) Pick out the word from the passage which means wide range or collection of things which are impressive.
4) Why is specialized hardware required for smartphones ?
5) What do designers of computing device ensure ?

IV. Answer **any three** of the following questions in **a** sentence or **two** : (2×3=6)

1) What is Aggressive listening ?
2) Define verbal communication.
3) Mention any two listening barriers.
4) What are the first two stages of listening ?
5) Define comprehensive listening.

V. Change the following paragraph to reported speech. 3

"How very well you speak Hindi!" Murali said. "I ought to know it", Banu modestly said. "I learnt it in school, and moreover my mother is from Delhi."

VI. Imagine your college invites Sudha Murthy to preside over the 'Women's Day' celebration. Draft a vote of thanks for this occasion. 3

OR

Prepare a speech to thank Registrar Evaluation VTU who inaugurated the 'Literary Club' in your college.

VII. Write an essay on **any one** of the following topics : 5

a) Health and Healing at your fingertips.
b) Frustration at the Airport.
c) Social Responsibility in youth.

VIII. Write a dialogue between father and son about course selection after PU. 5

OR

Complete the given dialogue by filling the blanks :

Mechanic : How can I help you, Sir ?
Car owner : _____ .
Mechanic : The engine has some _____ .
Car owner : _____ .
Mechanic : It may take a couple of days to repair it.
Car owner : _____ ?
Mechanic : I can try but can't guarantee anything.
Car owner : Ok then, I will leave the car. _____ .
Mechanic : _____ .

SECTION – B

Coursebook – 20 marks

IX. Answer **any five** of the following questions in **one** or **two** sentences : **(2×5=10)**

1) What made the refugees leave their village in the story, 'The Refugee'?
2) What does nuclear Sun refer to in the poem 'Earth Never Dies' ?
3) In the poem 'Bonds of Friendship' the poet describes the friend's heart as _____ and _____ .
4) The 'well' mentioned in the story 'The Corpse in the Well' was frequently used by the villagers. (True/False)
5) Why did the constable yell at Anna, in the story 'The Corpse in the Well'?
6) Who gave the old man a silver coin in the story, 'The Refugee'?
7) When did Ivan get angry with the General in the story 'The Death of the Government Clerk' ?

X. Answer **any two** of the following questions in a paragraph : **(5×2=10)**

1) Comment on the embarrassment faced by Ivan in the story 'The Death of a Government Clerk'.
2) The story 'A Corpse in the Well' criticizes the attitude of society towards Mahar community. Explain.
3) Describe the plight of the refugees as narrated in the story 'The Refugee'.
4) Why does poet thank his friend in the end of the poem 'Bonds of Friendship ?

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