(2015 Batch onwards)

G 504.2

Reg. No. | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.Sc. Semester II – Degree Examination

April · 2019

ELECTRONICS

Transistor Biasing Circuits, Small Signal Amplifiers, Field Effect Transistors and Digital Circuits

Note: This question paper has three sections. Section A, Section B and Section c. Answer all sections.

Time: 3 hrs. **Max Marks: 100**

SECTION – A

1. Choose the correct answer from the choices given at the end of each question and write the correct answer. (12x1=12)

i) _____ transistor amplifier has the highest output impedance.
a) CE b) CB c) CC d) two stage CE

ii) A transistor biased in _____ region of the characteristics when it is used as an amplifier.
a) active b) cutoff c) saturation d) inverse

iii) The ideal value of stability factor is _____
a) 0 b) 1 c) 2 d) 100

iv) Pinch off voltage in a FET is designated by the symbol _____
a) V_{Ds} b) $V_{Gs(OFF)}$ c) V_{Gs} d) $V_{threshold}$

v) The JFET is _____
a) a unipolar device
b) a voltage controlled device
c) both (a) and (b)
d) current controlled device

vi) A p-channel E-MOSFET operates with _____
a) Only negative gate voltages
b) Only positive gate voltages
c) Both positive and negative gate voltages
d) Some positive gate and all negative gate voltages.

vii) _____ oscillator uses lead lag network in its feedback path
a) colpitt's b) Hartley c) phase shift d) Weinbridge

viii) The feedback factor of the phase shift network used in phase shift oscillator is _____
a) 3 b) 1/3 c) 29 d) 1/29

ix) With negative feedback _____
a) gain increases
b) bandwidth increases
c) noise increases
d) bandwidth decreases

x) In a T flip-flop, T refers to
a) Trigger b) Toggle c) Threshold d) Timer

Contd...2

xi) A 4-1 multiplexer requires _____ control lines.
a) 1 b) 2 c) 3 d) 4

xii) A full adder has _____ inputs and _____ outputs.
a) 1,2 b) 2,2 c) 3,2 d) 2,1

2. Answer any TEN questions. **(10x1=10)**

i) Mention any one advantages of CB amplifier over CE amplifier.
ii) Write the general expression for the gain of a negative feedback amplifier.
iii) Draw the frequency response curve of a CE amplifier.
iv) Write the expression for frequency of oscillations in Weinbridge oscillator.
v) Draw the symbol of n-channel JFET.
vi) Define feedback factor.
vii) What is meant by a multiplexer?
viii) Write the circuit diagram of half adder.
ix) Write shockley's equation for the drain current of an FET.
x) What is the function of PRESET input of a flipflop?
xi) Mention one advantage of transformer coupling over RC coupling.
xii) Which type of feedback is used in amplifiers?

3. Answer any TEN questions. **(10x2=20)**

i) What is meant by biasing a transistor? Name the biasing scheme used in most of the transistor amplifier circuits.
ii) What is the need of cascading of amplifiers?
iii) What are damped oscillations? Draw its waveform.
iv) Write the logic symbol and truth table of JK flipflop.
v) A negative feedback amplifier employs feedback network of gain 0.12. Calculate its gain if the gain without feedback is 500.
vi) A given JFET has I_{DSS}=6mA, V_{GSOFF} = -3V. Calculate I_D if V_{GS} = -1.2V.
vii) Draw the transfer characteristics of a D-MOSFET and indicate the different parameters.
viii) What is priority encoder? Name any one priority encoder.
ix) Draw the circuit diagram and truth table of full adder.
x) Write the timing diagram of clocked RS flip flop.
xi) Mention any two advantages of transformer coupling.
xii) Write the small signal AC model of JFET.

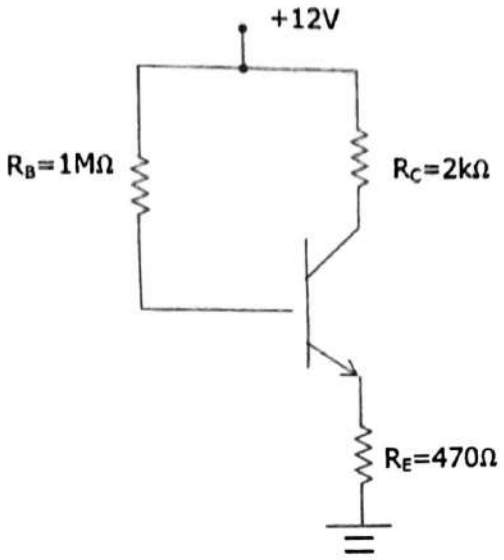
SECTION – B

4. Answer any SEVEN questions. **(7x4=28)**

i) Write a note on CC amplifier.

Contd...3

ii) Calculate V_{CE} in the following circuit. Given V_{BE}=0.7V and I_C = 2mA.



iii) Write any four handling precautions of MOSFET.

iv) With circuit diagram explain the working of Hartley oscillator.

v) Determine the frequency of oscillations in a Colpitt's oscillator having an inductor L=25μH, capacitors C_1=0.1μF and C_2=0.4μF.

vi) Design a half subtractor using the combinational circuit design procedure.

vii) Explain the working of CG amplifier.

viii) A JFET CS amplifier uses drain resistance R_D=3kΩ. The FET used has r_d=50kΩ and g_m= -3.3 mʊ. Calculate the voltage gain and the output voltage for an input voltage of 0.5V_{P-P}.

ix) Derive the expression for the gain of a negative feedback amplifier.

x) Design a 3-bit odd parity generator with the help of combinational logic circuit design procedure.

SECTION – C

Answer any THREE full questions. **(10x3=30)**

5. a) Obtain the ac equivalent circuit of a CE amplifier using h-parameter model and obtain the expression for its voltage gain. **(5)**

b) Draw the circuit diagram of 2 stage RC coupled CE amplifier. Calculate the overall gain of a 2 stage CE amplifier, if gains of the first and second stages are 30 and 20 respectively. **(5)**

6. a) With circuit diagram explain the working of phase shift oscillator. Give the expression for its frequency of oscillations. **(5)**

b) Realize a 4-1 MUX using basic gates. **(5)**

7. a) With block diagram explain the working of 4-bit parallel binary adder. **(5)**

b) With necessary diagrams explain the drain characteristics of an n-channel E-MOSFET. **(5)**

8. a) With suitable diagrams explain the basic structure and working of n-channel JFET. **(5)**

b) The ratio of inductances L_1:L_2 in a Hartely oscillator is 1:3. If the frequency of oscillations is 50kH_z and C=2μF, Find the values of L_1 and L_2. **(5)**

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(2015 Batch onwards)

G 505.2

Reg. No. : | | | | | | |

St Aloysius College (Autonomous)
Mangaluru
B.Sc. Semester II - Degree Examination
April - 2019

COMPUTER SCIENCE
C - Programming

Time: 3 Hours **Max. Marks: 100**

PART– A

1. **Answer any TEN of the following:** **(10×2=20)**

a) What are constants in ' C'? Give an example.

b) Give any two rules to define a variable name.

c) Write the equivalent ' C' expression for:

i) $d = ut + (at^2)/2$

ii) $z = \left(-b + \sqrt{b^2 - 4ac}\right)/2a$

d) Why do we use goto statement? Give example

e) Write the syntax of do.... while loop.

f) What is the purpose of strcmp( ) function?

g) Differentiate between local and global variables.

h) Define the terms : i) Scope of a variable
ii) Life time of a variable.

i) What is a function? What is the default return type of a function?

j) How does a union differ from a structure?

k) What is the meaning of opening a file? How is it achieved?

l) What is a pointer? How do you declare a pointer variable?

PART - B

Answer any ONE FULL question from each unit

UNIT – I

2. a) What is an operator? Explain logical and relational operators with example. **(8)**

b) Explain the basic structure of a C program. **(6)**

c) Write a note on the precedence of arithmetic operators with an example. **(6)**

OR

3. a) Explain in detail primary data types in C **(8)**

b) Explain formatted input statement with syntax and example. **(6)**

c) Differentiate between **(6)**

i) single character constant and string constant.

ii) floor( ) and ceil( )

iii) = and ==

UNIT – II

4. a) Explain if....elseif ladder with syntax, flowchart and example. **(8)**

Contd...2

b) What is an array? Explain the declaration and initialization of a one dimensional array. (6)

c) Explain 'switch case' with an example. (6)

OR

5. a) Write a program to read and find the sum of two matrices. (8)

b) With a suitable example explain break and continue statements. (6)

c) Explain if.....else and nesting of if with syntax and example. (6)

UNIT – III

6. a) Describe various categories of functions. (8)

b) How do we declare and initialize string variables? Explain with suitable example. (6)

c) Explain function prototyping with an example. (6)

OR

7. a) Explain various storage classes with appropriate example. (8)

b) What is recursion? Explain with an example. (6)

c) Write a program to count the number of vowels in a string. (6)

UNIT – IV

8. a) Define a structure ' student ' containing data members regno, name and marks in three subjects. (8)

Write a C program to accept the values to the members and display the total and average.

b) Explain the significance of the indirection operator with example. (6)

c) Write a note on union. (6)

OR

9. a) What is a structure? Explain how the structure variables are declared and defined? (8)

b) Explain fprintf() and fscanf() functions with syntax and example. (6)

c) How can we pass pointer as function arguments? Explain with an example. (6)

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(2016 Batch onwards)

G 506.2

Reg. No: | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.Sc. Semester II – Degree Examination

April - 2019

STATISTICS

Probability Distributions

Time: 3 Hours **Max. Marks: 100**

Note: Answer all parts

PART – A

Answer any TWELVE of the following. **(2x12=24)**

1. Define mathematical expectations of a discrete random variable.
2. With usual notations prove that E(ax+b)=aE(x)+b.
3. Define variance of a linear combination of random variables.
4. Determine the mode of binomial distribution for which the mean is 4 and variance 3.
5. Give two examples for Poisson distribution.
6. State the conditions under which binomial distribution tends to Poisson distribution.
7. What is the relation between negative binomial distribution and geometric distribution?
8. Define hyper geometric distribution with parameters N,M and n.
9. If $X \sim U(a, b)$, write down the expression for its mean and variance.
10. Write the p.d.f. of a standard normal variate.
11. State any two characteristics of the normal distribution.
12. Define beta distribution of the first kind.
13. Write the p.d.f. of gamma distribution with parameter λ.
14. Write the p.d.f. of standard Cauchy distribution.
15. Define exponential distribution with parameter θ.

PART – B

Answer any SIX of the following. **(6x6=36)**

16. State and prove the multiplication theorem of expectation of two discrete random variables.
17. Find the m.g.f. of normal distribution.
18. Obtain harmonic mean of beta distribution of second kind.
19. Find m.g.f of exponential distribution.
20. State and prove the reproductive property of independent Poisson variates.
21. Obtain mode of Poisson distribution.
22. Derive the mean and variance of binomial distribution.
23. State and prove memory less property of geometric distribution.

Contd...2

24. Obtain the median of Cauchy distribution.

PART – C

Answer any FOUR of the following. **(10x4=40)**

25. a) State and prove the addition theorem of expectation for continuous random variables.
    b) Obtain the mode for Cauchy distribution.

(5+5)

26. a) Obtain the recurrence relation for the central moments of binomial distribution.
    b) Show that with usual notations.
    $V(ax+b) = a^2v(x)$

(7+3)

27. a) Show that negative binomial distribution tends to Poisson distribution.
    b) Find mean and variance of hyper geometric distribution.

(4+6)

28. a) Obtain the m.g.f. of geometric distribution.
    b) Show that hyper geometric distribution tends to binomial distribution.

(3+7)

29. Obtain the mode and median of Normal distribution. **(10)**

30. a) Derive the mean and variance of gamma distribution with parameter λ.
    b) If X and Y are independent gamma variates with parameters μ and λ respectively, show that the variables U=X+Y and $Z = \frac{X}{X+Y}$ are independent and that U is a $\gamma(\mu+\lambda)$ variate and Z is a $\beta_1(\mu, \lambda)$ variate.

(4+6)

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(2014 batch onwards)

G. 507.2

Reg. No: | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.Sc. Semester II – Degree Examination

April - 2019

BOTANY

Biodiversity II, Cell Biology, Histology & Anatomy

Time: 3 Hours **Max. Marks: 100**

Instructions: **a) Answer all the sections.**
b) Draw diagrams wherever necessary.

SECTION – A

I. Answer any TEN of the following in a few sentences each. (10x2=20)

1. Write any two similarities of bryophytes with pteridophytes.
2. Draw a labelled diagram of conidiophore in *Penicillium.*
3. What is a nucleosome?
4. What is i) Moss flower ii) amphigastria?
5. List out the causative agents of
   i) Blast disease of rice ii) Tikka disease of groundnut
6. Write the function of peristomial teeth.
7. Differentiate between uredospores and teleutospores.
8. What is i) Hartig's net ii) Arbuscle?
9. What are sclereids? Name any two types.
10. Differentiate between euchromation and heterochromatin.
11. What are folicolous fungi? Give an example.
12. What are i) soridia ii) isidia.

SECTION – B

II. Answer any SIX of the following. (6x5=30)

1. Give the outline of Alexopoulus system of fungal classification upto the level of classes with two features and an example for each class.
2. Classify bryophytes up to the level of classes with examples.
3. Explain the symptoms and control measures of smut in sorghum.
4. Explain the structure of fruiting body of *Agaricus* with the help of a labelled sketch.
5. Give a comparative account of the anatomy of dicot and monocot leaf.
6. Write a note on etiology, symptoms and control measures of "Powdery mildew of Grapes".
7. Describe the morphology of moss gametophyte.
8. Explain the process of intrastelar secondary growth in dicot stem.

Contd...2

SECTION – C

III. Answer any FIVE of the following. **(5x10=50)**

1. Write a detailed note on the structure and function of phloem.
2. Explain the different stages of meiosis I with labelled diagrams.
3. Describe the internal structure of the sporophyte in *Anthoceros*.
4. Write a note on the i) abnormal leaf-fall of Rubber and ii) wilt of Cotton.
5. Write a descriptive note on the anatomy of
   i) apothecium in *Peziza* and ii) stroma in *Xylaria*
6. Explain the morphology and anatomy of Riccia thallus.
7. Write a descriptive note on the anatomy of
   i) Heteromerous lichen thallus and ii) Morphological types of Lichens.
8. Explain the nutritional types of fungi with examples.

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(2014 Batch onwards)

Reg. No.: | | | | | | |

G 508.2

St Aloysius College (Autonomous)

Mangaluru

B.Sc. Semester II – Degree Examination

April - 2019

ZOOLOGY

ANIMAL DIVERSITY (CHORDATA)

Time: 3 Hours. Max Marks: 100

Note: I) Answer any TEN questions from PART A and ONE FULL question from each unit of PART B.

ii) Draw diagrams wherever necessary.

PART –A

I. Answer any TEN of the following. (10X2=20)

a) Write any two distinctive features of class Cyclostomata.

b) Define retrogressive metamorphosis with an example.

c) What are metapleural folds?

d) Write any two differences between frog and toad.

e) Distinguish between homocercal and heterocercal fins.

f) Draw a labeled diagram of hyoid apparatus.

g) Name and mention the function of flight muscles in birds.

h) Write any two important salient features of order Crocodelia.

i) What is Pecten? Where is it found?

j) What is diastema?

k) Write the scientific name of a) Lion b) Flying fox

l) Explain the term placenta.

PART – B

Select ONE full question from each unit.

Unit I

II. a) Give an account of the general characters of Phylum Chordata with suitable examples. **(10)**

b) Draw and explain the external morphology of *Herdmania*. **(5)**

c) Draw and explain the structure of Ammocoetus larva. **(5)**

OR

III. a) Write the distinctive characters of subphylum Cephalochordata with suitable examples. **(10)**

b) Draw and explain the external morphology of *Myxine*. **(5)**

c) Classify subphylum Vertebrata upto classes. Give an example for each class. **(5)**

Contd...2

Unit II

IV. a) Classify class Amphibia upto orders with distinctive features and examples. **(10)**

b) Draw a labeled diagram of dorsal view of skull of frog. **(5)**

c) Draw and explain typical vertebra of frog. **(5)**

OR

V. a) Give an account of the general characters of Pisces with suitable examples. **(10)**

b) Explain the different types of scales found in fishes. **(5)**

c) Explain the accessory respiratory organs in *Anabas* and *Clarias.* **(5)**

Unit III

VI. a) Compare the salient features of Palaeognathae and Neognathae with suitable examples. **(10)**

b) Write a brief account of order Chelonia. **(5)**

c) Write a note on any two common poisonous snakes. **(5)**

OR

VII. a) List the general characters of Reptilia with examples. **(10)**

b) Explain poison apparatus in cobra and its working mechanism. **(5)**

c) Comment on flight adaptation in birds. **(5)**

Unit IV

VIII a) With a neat labeled diagram explain the digestive system of rat. **(10)**

b) Explain the salient features of order Carnivora. **(5)**

c) Write a note on Duck billed platypus. **(5)**

OR

IX. a) Explain the reptilian and mammalian characters of Prototheria with examples. **(10)**

b) Explain the different types of gaits found in mammal. **(5)**

c) Write a note on ruminant stomach. **(5)**

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(2013 batch onwards)

G 510.2

Reg. No: | | | | | | |

St. Aloysius College (Autonomous)

Mangaluru

B.Sc. Semester II – Degree Examination

April - 2019

BIOCHEMISTRY

Human Physiology and Nutritional Biochemistry

Time: 3 Hours **Max. Marks: 100**

Instructions: 1. Write the question and subdivision clearly.
2. Write equations & diagrams wherever necessary.
3. Answer PART-A in the first two pages of the answer book.

PART – A

Answer any TEN of the following. **(10x2=20)**

1. a) Mention the types of water present in body.
   b) What is acidosis and alkalosis?
   c) Mention any two tests which indicate liver is functioning normally.
   d) What is resting membrane potential?
   e) What is respiratory quotient?
   f) Write difference between PER & NPU.
   g) What are essential fatty acids? Give example.
   h) Write any two important functions of Na.
   i) Write the structure of Vitamin E.
   j) Mention any two neurotransmission inhibitors.
   k) What are antivitamins?
   l) Why carbohydrates in the food provide immediate energy when compared to other nutrients?

PART – B

Answer any SIX of the following. **(6x5=30)**

2. Explain absorption and transport of carbohydrate.
3. How lungs are involved to maintain acid base balance.
4. Write a note on Parkinson's disease.
5. Write a note on bomb calorimeter.
6. Explain the functions and deficiencies of I and Ca.
7. Write structure, function, dietary sources and deficiency of Vit A.
8. What are adulterants? Write about different adulterants.
9. How does fat digestion take place in our body? Explain.

Contd...2

PART – C

Answer any FIVE of the following. **(5x10=50)**

10. Explain the mechanism of Blood coagulation.
11. Write the structure and types of neurons. Add a note on nerve impulse transmission.
12. Write a short note on a) Malnutrition b) Selenium
13. Explain any two structures, biological role and deficiency of water soluble vitamins.
14. What are a) carcinogens b) procarcinogens c) trypsin inhibitors?
15. Write the composition and functions of saliva, gastric, bile and pancreatic juices.
16. Describe the mechanism of detoxification reactions.

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(2014 Batch onwards)

G.511.2

Reg. No.: | | | | | | |

St Aloysius College (Autonomous)
Mangaluru
B.Sc. Semester II – Degree Examination
April - 2019
BIOTECHNOLOGY
BIOCHEMISTRY

Time: 3 Hours. **Max Marks: 100**

PART –A

1. **Answer any TEN of the following.** **(10X2=20)**

a) Write any two characteristic features of peptide bond.

b) Give examples for any two reducing sugars.

c) Define K_m value.

d) Define rancidity.

e) What are Zwitter ions?

f) Name the monomer of starch? List two types of linkages that exists between monomers of starch.

g) Define Katal.

h) What is biological standard state?

i) State 2nd law of thermo dynamics.

j) What are multi enzymes? Give an example.

k) Give two examples for water soluble vitamins.

l) What is endergonic reaction? Give a biological reaction which is endergonic.

PART-B

Answer any SIX of the following. **(6X5=30)**

2. Describe the structure of cellulose.
3. Write a note on phospholipids.
4. Explain the quarternary structure of proteins with examples.
5. Explain the physical and chemical properties of aminoacids.
6. Describe lock and key model.
7. Write a note on high energy compounds.
8. Explain the significance and construction of L.B plot with suitable examples.
9. What is electron transport chain? Explain.

Contd...2

PART-C

Answer any FIVE of the following. (5X10=50)

10. Describe the structure and functions of peptidoglycan and chitin.
11. Give an account on covalent and noncovalent interactions in biomlecules.
12. Describe the classification of aminoacids.
13. Discuss different factors affecting enzyme activity.
14. Describe the types of RNA and add a note on its functions.
15. Write an account on reversible inhibition with suitable examples.
16. Explain the process of gluconeogenesis. Add a note on its applications.
17. Give a detailed account on β -oxidation of fatty acids. Mention its significance.

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(2016 Batch Onwards)

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G513.2

St Aloysius College (Autonomous)

Mangaluru

B.Sc. - SEMESTER II – Degree Examination

April - 2019

ECONOMICS

PRINCIPLES OF ECONOMICS - II

Time: 3 hrs. Max Marks: 100

PART - A

Answer any FOUR of the following questions in about 10 sentences each. (4×5=20)

1. What are the features of monopoly?
2. Write note on contestable markets theory.
3. Write a note on Subsistence Theory of Wages.
4. Differentiate between GNP and NNP.
5. What is accelerator?
6. Briefly explain Schumpeter's theory of business cycles.

PART – B

Answer any FOUR of the following questions in about 20 sentences each. (4×10=40)

7. What is price discrimination? What are the conditions essential for price discrimination?
8. What is oligopoly? Explain the collusive oligopoly.
9. Briefly explain the Liquidity Preference Theory of interest.
10. Explain the various methods of measuring national income.
11. What is consumption function? What are its determinants?
12. Explain the phases of business cycle.

PART – C

Answer any TWO of the following questions in about 50 to 60 sentences each. (2×20=40)

13. Explain the importance of time element in price determinations under perfect competition.
14. Explain the scope, uses and limitations of Macro Economics.
15. Explain the Classical Theory of Employment.
16. Explain types and causes of inflation.

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(2018 Batch Onwards)

G 701.2 Reg. No: | | | | | | |

St. Aloysius College (Autonomous)

Mangaluru

B.A/B.Sc./B.C.A.- Semester II – Degree Examination

April - 2019

FOUNDATION COURSE IN INDIAN CONSTITUTION AND VALUE EDUCATION

Time: 3 Hours **Max. Marks: 100**

PART – A

INDIAN CONSTITUTION

I. Answer all the following questions in 3 sentences each. Each question carries one mark: (1x5=5)

ಕೆಳಗಿನ ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳನ್ನು 3 ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿಯೊಂದು ಪಶ್ನೆಗೂ 1 ಅಂಕಗಳು.

1. Who is the temporary president of the constituent assembly?
ಸಂವಿಧಾನ ರಚನಾ ಸಮಿತಿಯ ತಾತ್ಕಾಲಿಕ ಅಧ್ಯಕ್ಷರು ಯಾರಾಗಿದ್ದರು?

2. Which part and articles of Indian Constitution mention about Fundamental Rights of Indian citizen.
ಭಾರತೀಯ ಪೌರನ ಮೂಲಭೂತ ಹಕ್ಕುಗಳನ್ನು ಸಂವಿಧಾನದ ಯಾವ ಭಾಗ ಮತ್ತು ವಿಧಿಗಳಲ್ಲಿ ನಮೂದಿಸಲಾಗಿದೆ?

3. From which constitution, the idea of emergency powers of the president of India was borrowed?
ರಾಷ್ಟ್ರಧ್ಯಕ್ಷರ ತುರ್ತು ಪರಿಸ್ಥಿತಿಯ ಅಧಿಕಾರವನ್ನು ಯಾವ ಸಂವಿಧಾನದಿಂದ ಪರವಲು ಪಡೆಯಲಾಯಿತು?

4. Which are the four objectives of preamble?
ಸಂವಿಧಾನ ಪೀಠಿಕೆಯಲ್ಲಿರುವ ನಾಲ್ಕು ಉದ್ದೇಶಗಳು ಯಾವುದು?

5. Expand SEBI.
ಎಸ್.ಇ.ಬಿ.ಐ ಪದವನ್ನು ವಿಸ್ತರಿಸಿರಿ.

II. Answer any FIVE questions in about a paragraph, each question carries 3 marks: (3x5=15)

ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಐದು ಪ್ರಶ್ನೆಗಳಿಗೆ ಒಂದು ಖಂಡದೊಳಗೆ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ 3 ಅಂಕಗಳು.

6. Three children at a school in Kerala belong to a sect called 'Jehovah's witness', who worship only Jehovah the creator and none other, refused to sing the National Anthem: 'Jana Gana Mana'. According to them, it is against the tenets of their religious faith-"not the words or the thoughts or the National Anthem, but the singing of it". They desisted from actual singing only because of their aforesaid honest, belief and conviction. They used to stand up in respectful silence daily, during the morning assembly when the National Anthem was sung.
   a) Do you approve of the behavior of children?
   b) Explain this case in the light of Right to Freedom (Art.19) and Right to Religion (Art.25) with specific reference to right to conscience.

Contd...2

ಕೇರಳದ ಶಾಲೆಯೊಂದರಲ್ಲಿ "ಯೆಹೋವನ ಸಾಕ್ಷಿ" ಎಂಬ ಪಂಥಕ್ಕೆ ಸೇರಿರುವ ಮೂರು ಮಕ್ಕಳು ಅವರ ಸೃಷ್ಟಿಕರ್ತ ಯೆಹೋವನನ್ನು ಮಾತ್ರ ಪೂಜಿಸುತ್ತಾರೆ ಎಂದು ರಾಷ್ಟ್ರಗೀತೆ "ಜನಗಣಮನ"ವನ್ನು ಹಾಡಲು ನಿರಾಕರಿಸುತ್ತಾರೆ. ಅವರ ಪ್ರಕಾರ ರಾಷ್ಟ್ರಗೀತೆಯ ಹಾಡುವಿಕೆಯು ಅವರ ಧಾರ್ಮಿಕ ಸಿದ್ಧಾಂತಗಳ ವಿರುದ್ಧವಾಗಿದೆ. ಅವರು ಅದರ ಪದಗಳು ಮತ್ತು ಚಿಂತನೆಯ ವಿರೋಧಿಯಲ್ಲ. ಇವರು ಈ ಮೇಲೆ ತಿಳಿಸಿದ ಪ್ರಾಮಾಣಿಕ ನಂಬಿಕೆಯಿಂದಾಗಿ ರಾಷ್ಟ್ರಗೀತೆಯ ಗಾಯನದಿಂದ ದೂರವಿದ್ದರು. ಪ್ರತಿದಿನ ಬೆಳಗ್ಗಿನ ಸಭೆಯಲ್ಲಿ ರಾಷ್ಟ್ರಗೀತೆಯ ಗಾಯನವಾದಾಗ ಅವರು ಗೌರವದಿಂದ ಮೌನವಾಗಿ ಎದ್ದು ನಿಲ್ಲುತ್ತಿದ್ದರು.

ಅ) ಈ ಮಕ್ಕಳ ವರ್ತನೆಯನ್ನು ನೀವು ಅನುಮೋದಿಸುತ್ತೀರಾ?

ಆ) ಸ್ವಾತಂತ್ರ್ಯದ ಹಕ್ಕು (ವಿಧಿ 19) ಮತ್ತು ಧರ್ಮದ ಹಕ್ಕು (ವಿಧಿ 25) ನ್ನು ಆಧರಿಸಿ ಈ ಮೇಲಿನ ದೃಷ್ಟಾಂತವನ್ನು ವಿಶ್ಲೇಷಿಸಿ ಬರೆಯಿರಿ.

7. Explain any three types of writs enshrined in the constitution.
ಸಂವಿಧಾನದಲ್ಲಿ ಕೊಟ್ಟಿರುವ ಯಾವುದಾದರೂ ಮೂರು ರಿಟ್ ಅರ್ಜಿಗಳ ಬಗ್ಗೆ ಬರೆಯಿರಿ.

8. Write a note on Right to education.
ಶಿಕ್ಷಣದ ಹಕ್ಕಿನ ಮೇಲೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

9. Explain the composition of union council of ministers.
ಕೇಂದ್ರ ಮಂತ್ರಿಮಂಡಲದ ರಚನೆಯ ಕುರಿತು ವಿವರಿಸಿರಿ.

10. Write your opinion on Tripple Talaq Bill.
ಟ್ರಿಪಲ್ ತಲಾಖ್ ಮಸೂದೆಯ ಬಗ್ಗೆ ನಿಮ್ಮ ಅಭಿಪ್ರಾಯವನ್ನು ಬರೆಯಿರಿ.

11. Write a note on parliamentary sessions in India.
ಭಾರತೀಯ ಸಂಸತ್ತಿನ ಅಧಿವೇಶನಗಳ ಕುರಿತು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

III. Answer any FIVE questions in about 10 sentences each. Each question carries 5 marks: (5x5=25)

ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಐದು ಪ್ರಶ್ನೆಗಳಿಗೆ 10 ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ 5 ಅಂಕಗಳು.

12. State the preamble of Indian Constitution. State its significance.
ಭಾರತದ ಸಂವಿಧಾನದ ಪ್ರಸ್ತಾವನೆಯನ್ನು ಬರೆದು ಅದರ ಮಹತ್ವವನ್ನು ತಿಳಿಸಿರಿ.

13. Explain the Right to Constitutional remedies.
ಸಂವಿಧಾನತ್ಮಕ ಪರಿಹಾರದ ಹಕ್ಕುಗಳನ್ನು ವಿವರಿಸಿರಿ.

14. Mention the liberal and general principles enshrined in directive principles of state policy.
ರಾಜ್ಯ ನಿರ್ದೇಶಕ ತತ್ವಗಳಲ್ಲಿರುವ ಉದಾರವಾದಿ ಮತ್ತು ಸಾಮಾನ್ಯ ತತ್ವಗಳನ್ನು ತಿಳಿಸಿರಿ.

15. Write a note on SEBI.
ಸೆಬಿಯ ಕುರಿತು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

16. Explain the role of Trade Unions in India.
ಭಾರತದಲ್ಲಿ ವ್ಯಾಪಾರಿ ಸಂಘಟನೆಗಳ ಪಾತ್ರವೇನು? ವಿವರಿಸಿರಿ.

17. Examine the role of TRAI.
TRAI ಯ ಪಾತ್ರವನ್ನು ಪರಿಶೀಲಿಸಿ ಬರೆಯಿರಿ.

18. Briefly mention the role of Vidhana Parishad in law making.
ಕಾನೂನು ರಚನೆಯಲ್ಲಿ ವಿಧಾನ ಪರಿಷತ್‌ನ ಪಾತ್ರವೇನು ಅನ್ನುವುದನ್ನು ಸಂಕ್ಷಿಪ್ತವಾಗಿ ವಿವರಿಸಿರಿ.

IV. Answer any ONE question in about 20 sentences each. The question carries 10 marks: (10x1=10)

ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಒಂದು ಪ್ರಶ್ನೆಯನ್ನು 20 ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿರಿ. ಪ್ರಶ್ನೆಗೆ 10 ಅಂಕಗಳು.

19. Explain the role of constituent assembly in drafting the Indian Constitution.
ಸಂವಿಧಾನ ರಚನೆಯಲ್ಲಿ ಸಂವಿಧಾನ ರಚನಾ ಸಭೆಯ ಪಾತ್ರವನ್ನು ಪರಿಶೀಲಿಸಿ ಬರೆಯಿರಿ.

Contd...3

20. Explain the powers and functions of Governor.
ರಾಜ್ಯಪಾಲರ ಅಧಿಕಾರ ಹಾಗೂ ಕಾರ್ಯಗಳನ್ನು ವಿವರಿಸಿರಿ.

V. Answer any ONE question in about 40 sentences each. The question carries 15 marks: **(15x1=15)**

ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಒಂದು ಪ್ರಶ್ನೆಯನ್ನು 40 ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿರಿ. ಪ್ರಶ್ನೆಗೆ 15 ಅಂಕಗಳು.

21. Explain the fundamental rights of Indian citizen.
ಭಾರತೀಯ ಪೌರನ ಮೂಲಭೂತ ಹಕ್ಕುಗಳನ್ನು ವಿವರಿಸಿರಿ.

22. Describe the organization powers and functions of Loksabha.
ಲೋಕಸಭೆಯ ರಚನೆ, ಅಧಿಕಾರ ಹಾಗೂ ಕಾರ್ಯಗಳನ್ನು ವಿವರಿಸಿರಿ.

PART – B

VALUE EDUCATION

VI. Answer any FOUR questions in about 8-10 sentences. Each question carries 5 marks: **(5x4=20)**

ಕೆಳಗಿನ ಯಾವುದಾದರೂ ನಾಲ್ಕು ಪ್ರಶ್ನೆಗಳನ್ನು 8–10 ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ 5 ಅಂಕಗಳು.

23. Explain any three sexually transmitted infections.
ಲೈಂಗಿಕ ಸಂಪರ್ಕದಿಂದ ಹರಡುವ ಯಾವುದಾದರೂ ಮೂರು ಸೋಂಕುಗಳನ್ನು ವಿವರಿಸಿರಿ.

24. Write a note on crisis during various stages of life span.
ಜೀವಿತಾವಧಿಯ ವಿವಿಧ ಹಂತದ ಒಕ್ಕಟ್ಟಿನ ಮೇಲೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

25. Name the types of drug and explain their effects.
ಮಾದಕ ವಸ್ತುಗಳನ್ನು ಹೆಸರಿಸಿರಿ. ಅವುಗಳ ಪರಿಣಾಮಗಳನ್ನು ವಿವರಿಸಿರಿ.

26. What are the phases of addiction? Describe.
ವ್ಯಸನದ ಹಂತಗಳಾವುವು? ವಿವರಿಸಿರಿ.

27. Explain the need for value clarification.
ಮೌಲ್ಯ ಸ್ಪಷ್ಟೀಕರಣದ ಅವಶ್ಯಕತೆಯನ್ನು ವಿವರಿಸಿರಿ.

28. Explain the methods of coping with anger.
ಕೋಪವನ್ನು ನಿಭಾಯಿಸುವ ವಿಧಾನಗಳನ್ನು ವಿವರಿಸಿರಿ.

VII. Answer any ONE question in about 20 sentences. The question carries 10 marks: **(10x1=10)**

ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಒಂದು ಪ್ರಶ್ನೆಯನ್ನು 20 ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. ಪ್ರಶ್ನೆಗೆ 10 ಅಂಕಗಳು.

29. Explain the misconceptions about counseling.
ಆಪ್ತ ಸಲಹೆಯ ಬಗ್ಗೆಯಿರುವ ತಪ್ಪು ಕಲ್ಪನೆಗಳನ್ನು ವಿವರಿಸಿರಿ.

30. What is alcoholism? Explain its effects on family.
ಮದ್ಯಪಾನ ಎಂದರೇನು? ಇದರಿಂದಾಗಿ ಕುಟುಂಬದ ಮೇಲೆ ಆಗುವ ಪರಿಣಾಮಗಳನ್ನು ವಿವರಿಸಿರಿ.

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G 504.4

(2015 Batch onwards)

Reg. No.

St Aloysius College (Autonomous)

Mangaluru

B.Sc. Semester IV – Degree Examination

April - 2018

ELECTRONICS

Breakdown Devices, Power Amplifiers, Fundamentals of Electronic Communications and Digital Computers

Note: This question paper has three sections. Section A, Section B and Section c. Answer all sections.

Time: 3 hrs. **Max Marks: 100**

SECTION – A

1. **Choose the correct answer from the choices given at the end of each question and write the correct answer.** **(12x1=12)**

i) Minimum numbers of address lines required to address 512 memory locations is ---------
a) 3 b)8 c) 16 d) 6

ii) In the forward blocking region of a silicon controlled rectifier, the SCR is -------
a) In the OFF state b) In the ON state
c) Reverse biased d) At the point of breakdown

iii) If a carrier is frequency modulated by a modulating signal of frequency 15 kHz, the percentage modulation is ---------
a) 40% b) 80% c) 50% d) 20%

iv) The device commonly used for triggering a TRIAC is ----------
a) Diode b) Transistor c) Zener diode d) Diac

v) The conversion efficiency of a class – A amplifier can be increased with -----
a) Direct coupled load b) Low DC power I/P
c) Transformer coupled load d) Low rating resistor.

vi) Q point of a class B power amplifier is placed ----------.
a) in the middle of the load line b) At saturation c) At cut-off
d) Between the middle of the load line and cut-off point

vii) The square law diode detector is used as ---------- detector.
a) FM b) AM c) PM d) PPM

viii) Which one of the following memory device is the fastest?
a) MOS b)Bipolar c) Flash d) Magnetic

ix) The radiation resistance of half wave dipole thin linear antenna is -------
a) 320 Ω b) 120 Ω c) 80 Ω d) 40 Ω

x) Number of side bands produced in AM----------
a) two b) depends on modulating frequency
c) depends on modulation index d) depends on carrier frequency

xi) A transmission line is having a reflection coefficient of 0.33 when terminated from load. Its standing wave ratio is ----------
a) 0.5 b) 0.33 c) 1.98 d) 3

xii) The percentage of the earths surface visible in terms of direct line of sight for a three satellite Clarke orbit communication link is
a) 42.2% b) 84.4% c) 98% d) 100%

Contd...2

2. Answer any TEN questions. **(10x1=10)**

i) Mention any two applications of a SCR.

ii) Distinguish between DIAC and TRIAC.

iii) Define holding current.

iv) Define the term skip distance.

v) How many reflectors are used in Yage-Uda antenna?

vi) Define critical frequency.

vii) What is the function of program counter in a microprocessor? Explain.

viii) Define MUF.

ix) What is meant by a volatile memory?

x) Write two differences between dynamic MOS cell and static MOS cell.

xi) Expand SMPS.

xii) Draw the circuit diagram of FET modulator.

3. Answer any TEN questions. **(10x2=20)**

i) Name the two types of radio receivers.

ii) What is the need for modulation?

iii) A class-A power amplifier has collector efficiency of 45% and is operated by 20V power supply. If AC power output is 5W, calculate the power dissipated within the transistor and power rating of transistor.

iv) What is a microprocessor? Give one example.

v) Explain the frequency spectrum of AM.

vi) What is station keeping?

vii) Define reflection coefficient of a transmission line. Give the equation for reflection coefficient.

viii) What is tuning and why it is required?

ix) Define a) load regulation and b) line regulation.

x) Draw the circuit and input and output wave forms of a half wave rectifier using SCR.

xi) List any two advantages of transformer coupled class A power amplifier.

xii) What do you mean by resonant and non resonant transmission lines?

SECTION – B

4. Answer any SEVEN questions. **(7x4=28)**

i) Show that SSBSC scheme of AM saves 83.3% power as compared to DSBTC scheme corresponding to 100% modulation.

ii) Compare SCR and TRIAC.

iii) An FM wave is represented by the equation $v = 10 \sin 2\pi \times 10^6 t (1 + 0.8 \sin 6200t)$. Calculate

a) Modulation index b) Modulating signal frequency

c) Power dissipated in 15 Ω load

Contd....3

iv) With a circuit diagram explain the action of zener regulator. Obtain the expression for S_v. 046

v) With a neat diagram explain Yagi-Uda antenna. .

vi) Derive the expression for characteristic impedance of a transmission line.

vii) Draw the block diagram of a UPS and explain.

viii) Write a note on evolution of microprocessor.

ix) With necessary circuit diagram explain write operation in a static MOS memory cell.

x) With circuit diagram explain class A transformer coupled power amplifier and calculate the maximum efficiency.

SECTION – C

Answer any THREE full questions. **(10x3=30)**

5. a) With necessary diagrams derive the expression for electric and magnetic field intensities at a distance 'r' from the center of the electric dipole. **(6)**

b) With necessary diagrams obtain the expression for conversion efficiency of a class B power amplifier. **(4)**

6. a) With block diagram, explain AM super heterodyne receiver. **(6)**

b) Determine the power content of each of the side bands and the carrier that has a percentage modulation of 80% and a total power of 1200 W. **(4)**

7. a) Discuss the principle of storing data in flash memory cell and explain the read process in a flash memory cell. **(6)**

b) With circuit diagram, explain the power control using TRIAC. **(4)**

8. a) Draw the architecture of a general microprocessor and explain. **(6)**

b) Write a note on parabolic refocetor **(4)**

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G 505.4

(2015 batch onwards)

Reg. No.

St Aloysius College (Autonomous)
Mangaluru
B.Sc Semester IV – Degree Examination
April- 2018
COMPUTER SCIENCE
JAVA PROGRAMMING

Time: 3 hrs. **Max Marks: 100**

PART–A

Answer any TEN of the following: **(10x2=20)**

1. a) How is Java more secured than other languages?
   b) What is type casting? Give an example.
   c) Given a=5, b=6, c=-6. Determine the values of
      i) a>b && a<c ii) a<c && b==c || b<a
   d) What are command line arguments?
   e) Mention any four exceptions of Java.
   f) What are wrapper classes?
   g) List the differences between array and vector.
   h) What is method overriding?
   i) List any two features of applet.
   j) What is an interface? Give the syntax of interface.
   k) What is the purpose of yield() and notify() in threads?
   l) What is finally block? When it is used?

PART–B

Answer any ONE full question from each unit. **(4x20=80)**

Unit I

2. a) Briefly explain the Java environment. **(8)**
   b) Explain the structure of a Java program. **(6)**
   c) Explain the following features of Java **(6)**
      i) platform independence
      ii) Multithreading

3. a) What are Java tokens? Explain them in detail. **(8)**
   b) Describe the classification of Java statements. **(6)**
   c) What are the benefits of labelled for loop? Explain with an example. **(6)**

Unit II

4. a) What is inheritance? Explain the different types of inheritances. **(8)**
   b) Explain the method overloading with suitable example. **(6)**
   c) Write a note on static members and static methods. **(6)**

Contd...2

5. a) Define a superclass 'Employee' with members eno, ename, basic with a constructor to initialize these members. (11)

Derive a subclass 'salary' with members HRA, DA, PF, INS, grosspay, netpay. Define a constructor to involve the superclass constructor. Define a method netsalary with the following calculations.

DA =45% of basic

HRA =7% of basic

PF= 10% of basic

INS= 650

Write a main class to demonstrate single level inheritance.

b) Explain the following: (9)

i) Final method
ii) Final class
iii) Abstract class

Unit III

6. a) What is package? How to create package? Explain with an example (8)

b) Explain the various string methods of Java. (6)

c) Write a note on Java API packages. (6)

7. a) Describe the various forms of implementing interfaces. Give example. (8)

b) Explain the different wrapper classes to convert primitive number to object numbers and vice versa. (6)

c) Explain the various methods used in vector class. (6)

Unit IV

8. a) Explain the built in exceptions of Java. (8)

b) Explain the life cycle of a thread. (6)

c) Write a note on JDBC connectivity models. (6)

9. a) With a neat diagram explain the life cycle of applet. (8)

b) Write a note on synchronization. (6)

c) Write a note on thread priorities. (6)

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G 506.4

(2016 Batch onwards)

Reg. No:

St Aloysius College (Autonomous)

Mangaluru

B.Sc. Semester IV – Degree Examination

April - 2018

STATISTICS

Statistical Inference -II

Time: 3 Hours
Note: Answer all parts

Max. Marks: 100

PART – A

1 **Answer any TWELVE of the following.** **(2x12=24)**

a. What is meant by statistical hypothesis?

b. Define power of a test procedure.

c. When do you say that a test procedure is consistent?

d. Define the term level of significance.

e. What are one tailed and two tailed tests?

f. State any two properties of likelihood ratio test procedure.

g. Briefly explain the large sample test procedure of testing the mean of a population.

h. Mention the applications of chi square distribution in testing of hypothesis.

i. Describe students't' test for testing correlation coefficient.

j. Explain't' test for testing the mean of a normal population.

k. Briefly explain the need for sequential test.

l. What do you mean by strength of SPRT?

m. State any two advantages of non parametric inference.

n. Distinguish between 'non parametric methods' and 'distribution free methods'.

o. State the assumptions in non parametric methods.

PART – B

Answer any SIX of the following. **(6x6=36)**

2. Let X be a random variable of continuous type with probability function $f(x)$. Find the power of a most powerful test of size $\alpha = 0.1$ for testing $H_0: f(x) = 2x, 0 < x < 1$ against $H_1: f(x) = 4x^3, 0 < x < 1$ based on a sample of size one.

3. Let $x_1, x_2, \ldots . x_n$ be a random sample from an exponential distribution with p.d.f $f(x) = \theta e^{-\theta x}\ x > 0,\ \theta > 0$. Derive the B.C.R for testing $H_0: \theta = \theta_0$ against $H_1: \theta = \theta_1 (< \theta_0)$

4. Stating the assumptions describe student's t test for paired samples.

5. Explain Chi square test for testing the independence of attributes.

Contd...2

6. Describe the test of equality of variances of two independent normal populations with i) known means ii) unknown means.
7. For a 2x2 contingency table with cell frequencies a, b, c and d show that the chi-square test statistic for testing the hypothesis of independence is given by $\frac{N(ad-bc)^2}{(a+b)(a+c)(b+d)(c+d)}$; N=a+b+c+d.
8. Derive Wald's SPRT for testing $H_0: \lambda = \lambda_0$ against $H_1: \lambda = \lambda_1 \ (> \lambda_0)$ where λ is the mean of a Poisson distribution.
9. Explain sign test for testing the median of a continuous population. Also give its large sample approximation.
10. Explain the procedure of testing the randomness of a given sample using run test.

PART - C

Answer any FOUR of the following. **(10x4=40)**

11 a) Derive the most powerful test of size α for testing $H_0: \mu = \mu_0$, against $H_1: \mu = \mu_1 (>\mu_0)$ where μ is the mean of a normal population with known variance σ_0^2. (5)

b) Explain the likelihood ratio test procedure. (5)

12. Let $x_1, x_2, \ldots x_m$ is a random sample from $N(\mu_1, \sigma_1^2)$ population. $y_1, y_2, \ldots y_n$ is a random sample from an independent $N(\mu_2 \sigma_2^2)$ population. Derive the likelihood ratio test statistic for testing $H_0: \sigma_1 = \sigma_2$ against $H_1: \sigma_1 \neq \sigma_2$ when μ_1 and μ_2 are unknown.

13. a) Explain Fisher's z transformation. How it is used to test $H_0: \rho = \rho_0$ where ρ is the population correlation coefficient. (5)

b) Derive Brandt Snedecor formula for chi-square test statistic for testing independence of attributes in a 2x k contingency table. (5)

14. a) Explain the large sample test procedure for testing the equality of proportions of two populations. (5)

b) Write a note on Yates correction for continuity. (5)

15. Derive SPRT for testing $H_0: \mu = \mu_0$ against $H_1: \mu = \mu_1 \ (> \mu_0)$ where μ_0 is the mean of a normal population with known variance σ_0^2. Also write down the equations of acceptance and rejection line.
16. Describe the median test. Derive the null distribution of the test statistic. Also give its large sample approximation.

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(2014 batch onwards)

G. 507.4

Reg. No: | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.Sc. Semester IV – Degree Examination

April - 2018

BOTANY

Plant Systematics and Commercial Botany

Time: 3 Hours **Max. Marks: 100**

Instructions: a) Answer all the sections.
b) Draw diagrams wherever necessary.

SECTION – A

I. Answer any TEN of the following in a few sentences each. (2x10=20)

1. Give any two significances of regional and national floras.
2. Who has introduced artificial system of classification? Give any two salient features of it.
3. Write botanical names of any two plant examples of the family Zingiberaceae.
4. What is stylopodium and mention the family in which it is characteristically found?
5. Define digital herbarium. Mention the significance.
6. What is characteristic inflorescence of Euphorbiaceae? Write any two features of it.
7. Define descendingly inbricate aestivation with a suitable example.
8. Mention the therapeutic uses of quinine.
9. Write the scientific name and economic importance of periwinkle.
10. Write the features of essential whorls in Annonaceae.
11. Write the characteristic features of gynoecium in Apocyanaceae.
12. Give the family, botanical name, part used and economic importance of Black cumin.

SECTION – B

II. Answer any SIX of the following. **(6x5=30)**

1. Write a note on molecular taxonomy.
2. Give the scientific names of any five of the pulses and their economic importance.
3. Write the salient features of Asclepiadaceae.
4. Explain spadix inflorescence.
5. Give the outlines of Engler and Prantle system of classification.
6. Explain the wet method of extraction of coffee.
7. Distinguish between Malvaceae and Teliaceae with two examples for each.
8. Write notes on tendrils in Cucurbitaceae.

Contd...2

G. 507.4

SECTION – C

(5x10=50)

III. Answer any FIVE of the following.

1. Explain the characteristic features of Cruciferae and Mimosaceae with scientific names of any two economically important plants.
2. Describe the diagnostic characteristics of Solanaceae. Distinguish it from Convolvulaceae.
3. Give an account on any five oil yielding plants.
4. Give a detailed account on salient features of Bentham and Hooker's system of classification. Add a note on its merits and demerits.
5. Explain the characteristic features of Rutaceae and Anacardiaceae with scientific names of any two economically important plants.
6. Explain botanical gardens and arboratum. Add a note on their significance.
7. Give an account on the uses and extraction process of sugar and rubber.
8. Explain the characteristic features of Moraceae and Liliaceae with scientific names of any two economically important plants.

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(2014 Batch onwards)

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St Aloysius College (Autonomous)

Mangaluru

B.Sc. Semester IV – Degree Examination

April - 2018

ZOOLOGY

Cell & Molecular Biology And Genetics

Time: 3 Hours. **Max Marks: 100**

Note: i) Answer any TEN questions from PART A and ONE FULL question from each unit of PART B.
ii) Draw diagrams wherever necessary.

PART –A

I Answer any TEN of the following. **(10X2=20)**

a) Write any four differences between prokaryotes and eukaryotes.

b) What is bivalent? How it is formed?

c) Differentiate between malignant and benign tumours.

d) Write the chemical structure of thymine.

e) What is redundant DNA? Mention its significance.

f) What is lac-operon? Mention the genes associated.

g) What is erythroblastosis foetalis? how is it caused?

h) List any two characteristics of multiple alleles.

i) What is a dihybrid backcross? Give an example.

j) What is a linkage map?

k) Give two examples for holandric traits in man.

l) Mention any two differences between Edward's syndrome and Cri-du-chat syndrome.

PART – B

Select ONE full question from each unit.

Unit I

II a) Explain the ultrastructure of chromosome based on nucleosome model. **(10)**

b) Write notes on mitotic inhibitors. **(5)**

c) What are oncogenes and tumour suppressor genes? Mention their respective roles. **(5)**

OR

III a) Describe the structure and functions of any two cell organelles. **(10)**

b) Give an account of biological carcinogens. **(5)**

c) Enumerate the events that take place during mitotic interphase. **(5)**

Unit II

IV a) Describe the process of DNA replication with suitable illustration. **(10)**

b) Explain the fine structure of gene. **(5)**

c) Enumerate the general properties of genetic code. **(5)**

OR

Contd...2

V a) Give an account of the different forms of RNA. (10)

b) What are split genes? Explain the mechanism of gene splicing. (5)

c) Explain how base analogs would induce point mutations. (5)

Unit III

VI a) What is dominant epistasis? Explain with an example. (10)

b) Write short note on eye color pigments in *Drosophila*. (5)

c) Explain the phenomenon of inheritance of yellow coat color in mice. (5)

OR

VII a) State the law of independent assortment and illustrate it with Mendel's experiments. (10)

b) Explain duplicate genes with a suitable example. (5)

c) A couple die together in an accident whose blood groups belonged to AB and B. Soon a person with blood group O comes to claim their property saying that he is their biological son. Work out and show whether he is their real son or not. (5)

Unit IV

VIII a) Explain sex linked inheritance with reference to hemophilia in humans. (10)

b) Write short note on amniocentesis. (5)

c) Explain the mechanism of sex determination in heterogametic females. (5)

OR

IX a) Explain incomplete linkage in *Drosophila*. (10)

b) Write short note on sex influenced traits. (5)

c) Give an account of Turner's syndrome. (5)

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(2014 onwards)

G 509.4

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St Aloysius College (Autonomous)
Mangaluru
B.Sc. Semester IV- Degree Examination
April 2018
MICROBIOLOGY
Microbial Ecology and Environmental Microbiology

Time: 3 Hours **Max. Marks:100**

Instructions: Draw diagrams wherever necessary
Answer questions from Part A, B and C

PART – A

1. Define/ Answer <u>any TEN</u> of the following **(2×10=20)**

a) Phylloplane
b) Impingement
c) Ground water
d) Prebiotics
e) Lotic habiitat
f) Gravity slide
g) Influenza virus
h) Coliforms
i) Septic tank
j) Rhizophere
k) Monotropoid mycorrhiza
l) Viability staining

PART B

ANSWER QUESTION 'a' OR 'b' AND 'c 'IS COMPULSORY FROM EACH UNIT. **(15x4=60)**

UNIT – I

2. a) Explain in detail about the structure and biota of lentic Habitat. Add a note on the factors affecting the Micro flora.

OR

2. b) Give a detailed account on rumen ecosystem. **(9)**

2. c) Write a short note on probiotics. **(6)**

UNIT – II

3. a) Explain in detail about indoor and outdoor microflora. Add a note on sources of microbes in air.

OR

3. b) Give an account on Diphtheria and Pneumonia. **(9)**

3. c) Discuss in brief about ventilation and biological safety cabinets. **(6)**

Contd..2

UNIT – III

4. a) Give an account on various bacterial water borne diseases.

OR

4. b) Explain the primary and secondary treatment of waste water. (9)

4. c) Discuss the standard tests for quality of drinking water. (6)

UNIT – IV

5. a) Explain the various positive interactions among soil micro organisms.

OR

5. b) Explain the methods used to measure microbial activities. (9)

5. c) Write a note on Endomycorrhizae. (6)

PART -C

Answer any FOUR of the following: (5x4=20)

6. a) Microbes of Human body and their significance.

b) Functions of marine flora

c) Anderson sampler

d) Chlorination

e) FISH

f) Disposal of treated sewage and sludge.

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G 510.4

(2013 batch onwards)

Reg. No: | | | | | | |

St Aloysius College (Autonomous)
Mangaluru
B.Sc. Semester IV– Degree Examination
April- 2018
BIOCHEMISTRY
Metabolism

Time: 3 Hours **Max. Marks: 100**

Instructions: 1. Write the question number and subdivision clearly.
2. Write equations and diagrams wherever necessary.
3. Answer Part – A in the first two pages of the answer book.

PART – A

Answer any TEN of the following. **(10×2=20)**

1. a) Name any one radio isotope and its role in the study of metabolism.
   b) What is the fate of pyruvate in muscle?
   c) Name the components of photosystem I.
   d) What are uncouplers? Give one example.
   e) Differentiate between glucogenic and ketogenic aminoacids.
   f) What is ketosis?
   g) Mention the role of RNase.
   h) What is deamination? Give example.
   i) Give the reaction of RNA with alkali.
   j) Write the structure of Porphyrin ring.
   k) Give any two physiological significance of bilirubin.
   l) What is meant by photolysis of water? Where it occurs in plants?

PART – B

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

2. Explain the steps involved in glycogenolysis.
3. Briefly explain the important steps in gluconeogenesis.
4. Write a note on cyclic photophosphorylation.
5. Explain the role of inhibitors of ETC.
6. Give an outline of cholesterol biosynthesis.
7. Write a note on transamination reactions.
8. Discuss the colour reactions of nucleic acids.
9. Write the flow chart of biosynthesis of porphyrins.

PART -C

Answer any FIVE of the following **(5×10=50)**

10. Describe glycolysis and its energetics.
11. Explain Pentose phosphate pathway and its physiological significance.
12. Give an account on β-oxidation of even number saturated fatty acids.
13. Explain the enzyme complexes of ETC with a neat diagram.
14. Describe Urea cycle and give its significance.
15. Explain the denovo synthesis of pyrimidines with schematic flow chart.
16. Explain TCA cycle.

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(2014 Batch onwards)

G.511.4

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St Aloysius College (Autonomous)
Mangaluru
B.Sc. Semester IV – Degree Examination
April - 2018
BIOTECHNOLOGY
Molecular Biology and Recombinant DNA Technology

Time: 3 Hours. **Max Marks: 100**

PART –A

1. **Answer any TEN of the following.** **(10X2=20)**

a) Define Muton.

b) What are transposons? Give two examples.

c) List the termination codons.

d) Define Conjugation.

e) Comment on Poly A tail.

f) Write a note on regulator genes and inducer genes.

g) Give two aims of gene cloning.

h) What are nucleases? Mention its functions.

i) Comment on Phagemids.

j) Expand IPTG.

k) What is an interferons? Give two uses.

l) Write a note on Trade Secret.

PART-B

Answer any SIX of the following. **(6X5=30)**

2. Explain the structure of TMV.
3. Describe any two processes of DNA repair mechanisms.
4. Give an account of Holliday Model.
5. Explain the steps involved in post transcriptional modification in Eukaryotes.
6. Give a general account on the scope of recombinant DNA technology.
7. Explain the chemical methods of introduction of DNA into plant and animal cells.
8. Describe the steps involved in Western Blotting technique.
9. Write a note on recombinant vaccines.

Contd...2

PART-C

Answer any FIVE of the following. (5X10=50)

10. Describe DNA replication in prokaryotes.
11. Explain the structure of DNA.
12. Give an account of process of transcription in prokaryotes.
13. Explain the process of initiation and elongation in eukaryotic translation.
14. What are restriction enzymes? Add a note on its mechanism of action and nomenclature.
15. Explain the role of anion-exchange resin in DNA purification.
16. Give a detailed account on gene therapy. Add a note on its types.
17. Explain in detail the hazards and biosafety measures of recombinant DNA technology.

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(2016 Batch Onwards)

G 513.4

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St Aloysius College (Autonomous)

Mangaluru

B.Sc. - SEMESTER IV – Degree Examination

April - 2018

ECONOMICS

INTERNATIONAL TRADE AND PUBLIC FINANCE

Time: 3 hrs. **Max Marks: 100**

PART - A

Answer any FOUR of the following questions in about 10 sentences each. **(4×5=20)**

1. What are the characteristics of international trade?
2. Write a note on Absolute Cost Advantage Theory of International trade.
3. Explain the objectives of exchange control.
4. Distinguish between balance of trade and balance of payments.
5. Write a note on taxable capacity.
6. What are the objectives of fiscal policy?

PART – B

Answer any FOUR of the following questions in about 20 sentences each. **(4×10=40)**

7. Explain the different types of economic integration.
8. Describe the comparative cost theory of international trade.
9. Explain the factors determining terms of trade.
10. List out the causes of disequilibrium in the balance of payments.
11. What is GST? Explain the features of GST?
12. Explain the various methods of public debt redemption.

PART – C

Answer any TWO of the following questions in about 50 to 60 sentences each. **(2×20=40)**

13. Examine the arguments for and against the policy of protection.
14. Explain the organizational structure and functions of WTO.
15. What is public revenue? Explain the various sources of public revenue.
16. Define budget. Explain various classification of budget.

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(2016 Batch onwards)

G 701.4

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St Aloysius College (Autonomous)

Mangaluru

B.A./B.Sc./B.C.A. - Semester IV – Degree Examination

April - 2018

FOUNDATION COURSE IN HUMAN RIGHTS AND VALUE EDUCATION

Time: 3 Hours **Max. Marks: 100**

PART – A

HUMAN RIGHTS

I. Answer all the following questions in three sentences each. Each question carries one mark: (1x5=5)

ಕೆಳಗಿನ ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳನ್ನು ಮೂರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿಯೊಂದು ಪಶ್ನೆಗೂ ಒಂದು ಅಂಕಗಳು.

1. Define human rights as stated by the Protection of Human Rights Act of 1993.
   1993ರ ಮಾನವ ಹಕ್ಕುಗಳ ರಕ್ಷಣಾ ಕಾಯಿದೆ ಪ್ರಕಾರ ಮಾನವ ಹಕ್ಕನ್ನು ವ್ಯಾಖ್ಯಾನಿಸಿರಿ.
2. Which day is observed as Human Rights Day?
   ಯಾವ ದಿನವನ್ನು ಮಾನವ ಹಕ್ಕುಗಳ ದಿನವೆಂದು ಆಚರಿಸಲಾಗುತ್ತದೆ?
3. Name the two covenants enumerated by the General Assembly of the UN.
   ವಿಶ್ವ ಸಂಸ್ಥೆಯ ಸಾಮಾನ್ಯ ಸಭೆಯು ಜಾರಿಗೆ ತಂದ ಎರಡು ಒಡಂಬಡಿಕೆಯನ್ನು ಹೆಸರಿಸಿರಿ.
4. Which day is celebrated as consumer's day in India?
   ಭಾರತದಲ್ಲಿ ಯಾವ ದಿನವನ್ನು ಗ್ರಾಹಕರ ದಿನವೆಂದು ಆಚರಿಸಲಾಗುತ್ತದೆ?
5. Who is the present chairman of NHRC?
   ರಾಷ್ಟ್ರೀಯ ಮಾನವ ಹಕ್ಕುಗಳ ಆಯೋಗದ ಪ್ರಸ್ತುತ ಅಧ್ಯಕ್ಷನಾರು?

II. Answer any FIVE questions in about a paragraph. Each question carries 3 marks: (3x5=15)

ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಐದು ಪ್ರಶ್ನೆಗಳಿಗೆ ಒಂದು ಪ್ಯಾರದಷ್ಟು ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ 3 ಅಂಕಗಳು.

6. In the Kerala Water Supply Department except few officials, various persons were appointed in different capacities, such as cleaners, pump operators, draftsman, drivers etc. as casual labourers on lesser wages through the employment exchange between 1981 and 1988. There were no promotions. Moreover some of the workers were terminated. In this regard several petitions were filed before the Supreme Court. [Jacob M Pathuparambli and others Vs. Kerala water authority [AIR 1990 sec 2228]. The Supreme court gave judgement and ordered in favour of, the petitioning workers.

   i) Do you think the judgement given by the Supreme Court is appropriate?

   ii) Do you think State government is just in appointing workers on daily wages and retain them without regularization of their services and pay fixation for years together? Give reasons.

   ಕೇರಳ ನೀರು ಸರಬರಾಜು ಇಲಾಖೆಯಲ್ಲಿ ಕೆಲವೊಂದು ಅಧಿಕಾರಿಗಳನ್ನು ಹೊರತು ಪಡಿಸಿ, ಚಾಲಕರು, ಶುಚಿಗೊಳಿಸುವವರು, ಪಂಪ್ ಆಪರೇಟರ್ ಮುಂತಾದ ಹುದ್ದೆಗಳಿಗೆ ಹಲವಾರು ಜನರನ್ನು ಆಯ್ಕೆ ಮಾಡಲಾಗಿತ್ತು. ಇವರ ನೇಮಕಾತಿ ಸಾಮಾನ್ಯ ಕೆಲಸಗಾರರಾಗಿ ಅತೀ ಕಡಿಮೆ ವೇತನದ ಆಧಾರದ ಮೇರೆಗೆ 1981–1988ರ ಉದ್ಯೋಗ ವಿನಿಮಯ ಕೇಂದ್ರದ ಮೂಲಕ ಆಗಿತ್ತು. ಇದಲ್ಲದೆ ಈ ಕೆಲಸಗಾರರಿಗೆ ಸೇವಾ ಭದ್ರತೆಯಿರಲಿಲ್ಲ ಹಾಗೂ ಅವರನ್ನು ಕೆಲಸದಿಂದ ತೆಗೆದು ಹಾಕಲಾಗುತ್ತಿತ್ತು. (ಸೇವಾ ಭದ್ರತೆಯಿರಲಿಲ್ಲ) ಇದರ ವಿರುದ್ಧವಾಗಿ ಕೆಲವೊಂದು ಕೆಲಸಗಾರರು ಸರ್ವೋಚ್ಚ ನ್ಯಾಯಾಲಯದಲ್ಲಿ ದಾವೆಯನ್ನು ಹೂಡಿದರು. ಸರ್ವೋಚ್ಚ ನ್ಯಾಯಾಲಯ ಈ ದಾವೆಯಲ್ಲಿ ಕೆಲಸಗಾರರ ಪರವಾಗಿ ತೀರ್ಪನ್ನು ನೀಡಿತು.

Contd...2

ಆ) ಸರ್ವೋಚ್ಚ ನ್ಯಾಯಲಯವು ಕೊಟ್ಟಿರುವ ಈ ತೀರ್ಪನ್ನು ನೀವು ಮಾನ್ಯವೆಂದು ಪರಿಗಣಿಸುತ್ತೀರಾ?

ಆ) ರಾಜ್ಯ ಸರಕಾರವು ನೌಕರರ ಆಯ್ಕೆಯನ್ನು ದಿನಗೂಲಿ ಆಧಾರದ ಮೇರೆಗೆ ಮಾಡಬಹುದೇ ಹಾಗೂ ಅವರ ಸೇವೆಯನ್ನು ಖಾಯಂಗೊಳಿಸದೆ ವೇತನವನ್ನು ನಿಗದಿಪಡಿಸದೆ ವರ್ಷಗಟ್ಟಲೆ ಸೇವೆಯಲ್ಲಿಟ್ಟು ಕೊಳ್ಳುವುದು ನ್ಯಾಯವೇ? ಕಾರಣ ಕೊಡಿ.

7. The State Government of Andhra Pradesh vacated forcefully the residents of Bhimrao Bada, with an intention to construct a building for Congress party. The residents of Bhimrao Bada, the opposition party and the general public opposed the action of the Governments. They approached the High Court of Andhra Pradesh. The High Court gave judgement in favour of the residents of Bhimrao Bada.

   i) Do you think the Government of Andhra Pradesh is justified in its action? Give reasons.

   ii) Identify the human rights violated in this case.

   ಆಂಧ್ರ ಪ್ರದೇಶ ಸರಕಾರವು ಕಾಂಗ್ರೆಸ್ ಪಕ್ಷಕ್ಕೆ ಕಟ್ಟಡವನ್ನು ಕಟ್ಟುವ ಸಲುವಾಗಿ ಭೀಮರಾವ್ ಬಾಡ ಎಂಬ ಪ್ರದೇಶದ ನಿವಾಸಿಗಳನ್ನು ಬಲವಂತ ಪೂರ್ವಕವಾಗಿ ತೆರವುಗೊಳಿಸಿತು. ಸರಕಾರದ ಈ ನಿಲುವನ್ನು ಆ ಪ್ರದೇಶದ ನಿವಾಸಿಗಳು, ವಿರೋಧ ಪಕ್ಷದವರು ಹಾಗೂ ಸಾರ್ವಜನಿಕರು ವಿರೋಧಿಸಿದ್ದರಲ್ಲದೆ, ಆಂಧ್ರ ಪ್ರದೇಶ ಉಚ್ಚ ನ್ಯಾಯಾಲಯದಲ್ಲಿ ದಾವೆಯನ್ನು ಹೂಡಿದರು. ಉಚ್ಚ ನ್ಯಾಯಾಲಯವು ಇದನ್ನು ಪರಿಶೀಲಿಸುತ್ತ ಭೀಮರಾವ್ ಬಾಡದ ನಿವಾಸಿಗಳ ಪರವಾಗಿ ತೀರ್ಪನ್ನು ನೀಡಿತು.

   ಆ) ಆಂಧ್ರ ಪ್ರದೇಶ ಸರಕಾರದ ಈ ಕೃತ್ಯವನ್ನು ನೀವು ಅನುಮೋದಿಸುತ್ತೀರಾ? ಕಾರಣ ಕೊಡಿ.

   ಆ) ಯಾವ ಮಾನವ ಹಕ್ಕು ಇಲ್ಲಿ ಉಲ್ಲಂಘನೆಯಾಗಿದೆ?

8. Explain the rights of transgender in India.
   ಭಾರತದಲ್ಲಿ ತೃತೀಯ ಲಿಂಗಿಗಳ ಹಕ್ಕುಗಳನ್ನು ವಿವರಿಸಿರಿ.

9. Explain the classification of Human Rights.
   ಮಾನವ ಹಕ್ಕುಗಳ ವರ್ಗೀಕರಣವನ್ನು ಚರ್ಚಿಸಿ ಬರೆಯಿರಿ.

10. Mention any four functions of PUDR.
    PUDRನ ಯಾವುದಾದರೂ ನಾಲ್ಕು ಕಾರ್ಯಗಳನ್ನು ಬರೆಯಿರಿ.

11. Define unorganized labourers. Mention any two problems faced by unorganized labourers.
    ಅಸಂಘಟಿತ ಕಾರ್ಮಿಕರು ಯಾರು? ವ್ಯಾಖ್ಯಾನಿಸಿರಿ. ಅವರು ಎದುರಿಸುತ್ತಿರುವ ಯಾವುದಾದರೂ ಎರಡು ಸಮಸ್ಯೆಗಳನ್ನು ತಿಳಿಸಿರಿ.

III. Answer any <u>FIVE</u> questions in about 10 sentences each. Each question carries 5 marks: **(5x5=25)**

ಕೆಳಗಿನ ಯಾವುದಾದರೂ <u>ಐದು</u> ಪ್ರಶ್ನೆಗಳಿಗೆ 10 ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ 5 ಅಂಕಗಳು.

12. Explain the nature of human rights.
    ಮಾನವ ಹಕ್ಕುಗಳ ಸ್ವರೂಪವನ್ನು ವಿವರಿಸಿರಿ.

13. Write a short note on consumer rights.
    ಗ್ರಾಹಕ ಹಕ್ಕುಗಳ ಬಗ್ಗೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

14. Discuss briefly the status of Dalits in India.
    ಭಾರತದಲ್ಲಿನ ದಲಿತರ ಸ್ಥಾನಮಾನದ ಬಗ್ಗೆ ಸಂಕ್ಷಿಪ್ತವಾಗಿ ಚರ್ಚಿಸಿ ಬರೆಯಿರಿ.

15. What is meant by indigenous population? Explain the problems faced by them.
    ಸ್ಥಳೀಯ ಬುಡಕಟ್ಟು ಜನಾಂಗ ಎಂದರೇನು? ಅವರು ಎದುರಿಸುವ ಸಮಸ್ಯೆಗಳನ್ನು ವಿವರಿಸಿರಿ.

16. Write a short note on racial discrimination.
    ವರ್ಣಭೇದ ನೀತಿಯ ಬಗ್ಗೆ ಲಘು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

Contd...3

17. Explain the role of students in promoting human rights.
ಮಾನವ ಹಕ್ಕುಗಳ ರಕ್ಷಣೆಯಲ್ಲಿ ವಿದ್ಯಾರ್ಥಿಗಳ ಪಾತ್ರವನ್ನು ವಿವರಿಸಿರಿ.

18. Who are refugees? Briefly explain their rights.
ನಿರಾಶ್ರಿತರೆಂದರೆ ಯಾರು? ಅವರ ಹಕ್ಕುಗಳ ಬಗ್ಗೆ ಸಂಕ್ಷಿಪ್ತವಾಗಿ ವಿವರಿಸಿರಿ.

IV. Answer any <u>ONE</u> question in about 20 sentences each. Each question carries 10 marks: **(10x1=10)**

ಕೆಳಗಿನ ಯಾವುದಾದರೂ <u>ಒಂದು</u> ಪ್ರಶ್ನೆಯನ್ನು 20 ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ 10 ಅಂಕಗಳು.

19. Explain the origin and development of human rights.
ಮಾನವ ಹಕ್ಕುಗಳ ಉಗಮ ಹಾಗೂ ಬೆಳವಣಿಗೆಯ ಬಗ್ಗೆ ವಿವರಿಸಿರಿ.

20. Examine the powers and functions of Amnesty International.
ಅಂತರಾಷ್ಟ್ರೀಯ ಕ್ಷಮದಾನ ಸಂಸ್ಥೆಯ ಅಧಿಕಾರ ಹಾಗೂ ಕಾರ್ಯಗಳನ್ನು ಪರಿಶೀಲಿಸಿ ಬರೆಯಿರಿ.

V. Answer any <u>ONE</u> question in about 40 sentences each. Each question carries 15 marks: **(15x1=15)**

ಕೆಳಗಿನ ಯಾವುದಾದರೂ <u>ಒಂದು</u> ಪ್ರಶ್ನೆಯನ್ನು 40 ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ 15 ಅಂಕಗಳು.

21. Discuss the composition, powers and functions of NHRC.
ರಾಷ್ಟ್ರೀಯ ಮಾನವ ಹಕ್ಕುಗಳ ಆಯೋಗದ ರಚನೆ, ಅಧಿಕಾರ ಹಾಗೂ ಕಾರ್ಯಗಳನ್ನು ಚರ್ಚಿಸಿ ಬರೆಯಿರಿ.

22. Explain the remedies against violation of human rights in India.
ಮಾನವ ಹಕ್ಕುಗಳ ಉಲ್ಲಂಘನೆ ವಿರುದ್ಧ ಲಭ್ಯವಿರುವ ಪರಿಹಾರೋಪಾಯಗಳನ್ನು ವಿವರಿಸಿರಿ.

PART – B

(VALUE EDUCATION)

VI. Answer any <u>FOUR</u> questions in about 8-10 sentences. Each question carries <u>FIVE</u> marks: **(5x4=20)**

ಕೆಳಗಿನ ಯಾವುದಾದರೂ <u>ನಾಲ್ಕು</u> ಪ್ರಶ್ನೆಗಳನ್ನು 8–10 ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿರಿ. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಗೂ 5 ಅಂಕಗಳು.

23. What is meant by abortion? What are the post-abortion syndromes?
ಗರ್ಭಪಾತ ಎಂದರೇನು? ಗರ್ಭಪಾತದ ನಂತರ ಕಂಡು ಬರುವ ಲಕ್ಷಣಗಳಾವುವು?

24. What is female foeticide? What are the reasons for female foeticide?
ಹೆಣ್ಣು ಭ್ರೂಣ ಹತ್ಯೆಯೆಂದರೇನು? ಹೆಣ್ಣು ಭ್ರೂಣ ಹತ್ಯೆಗೆ ಕಾರಣಗಳೇನು?

25. Explain Mahatma Gandhi's views on women empowerment.
ಮಹಿಳಾ ಸಬಲೀಕರಣದ ಬಗ್ಗೆ ಮಹಾತ್ಮ ಗಾಂಧೀಜಿಯವರ ಧೋರಣೆಗಳನ್ನು ವಿವರಿಸಿರಿ.

26. Write a short note on Euthanasia.
ದಯಾಮರಣದ ಬಗ್ಗೆ ಒಂದು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

27. What are the early signs of mental illness?
ಮಾನಸಿಕ ಅನಾರೋಗ್ಯದ ಪೂರ್ವ ಚಿಹ್ನೆಗಳಾವುವು?

28. Define suicide. What are the two main reasons for suicide?
ಆತ್ಮಹತ್ಯೆಯನ್ನು ವ್ಯಾಖ್ಯಾನಿಸಿರಿ ಹಾಗೂ ಅದರ ಎರಡು ಕಾರಣಗಳೇನು?

VII. Answer any <u>ONE</u> question in about 20 sentences. The Question carries 10 marks: **(10x1=10)**

ಕೆಳಗಿನ ಯಾವುದಾದರೂ <u>ಒಂದು</u> ಪ್ರಶ್ನೆಯನ್ನು 20 ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿ. ಪ್ರಶ್ನೆಗೆ 10 ಅಂಕಗಳು.

29. What is stress? What are the causes and symptoms of stress?
ಒತ್ತಡ ಎಂದರೇನು? ಒತ್ತಡಕ್ಕಿರುವ ಕಾರಣಗಳು ಹಾಗೂ ಚಿಹ್ನೆಗಳಾವುವು?

30. Explain the commandments advocated for conquering depression.
ಖಿನ್ನತೆಯ ಮೇಲೆ ನಿಯಂತ್ರಣ ಸಾಧಿಸಲು ಪ್ರತಿಪಾದಿಸಿದ ಮಾರ್ಗೋಪಾಯಗಳನ್ನು ವಿವರಿಸಿರಿ.

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