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0208M129

Candidate's Seat No : _____

Integrated LL.B. Sem.-2 Examination

IL - 111

Special Contract

August 2021

Time : 2-00 Hours] **[Max. Marks : 60**

Instructions

- *Figures to the right in bracket indicate marks for each question*
- Attempt Three questions from the following:

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1. Explain in details the meaning of Indemnity with its types and discuss in details the difference between Indemnity and Guarantee? (20)

2. Write notes on: (20)
   a) Specific performance of Contracts
   b) Recession of Contracts

3. Write notes on: (20)
   a) Modes of termination of an agency
   b) Essential elements of a valid guarantee?

4. Explain the essential features of a contract of bailment along with the rights and duties of the bailor and bailee. What is the difference between a contract of bailment and contract of pledge? (20)

5. Write notes on: (20)
   a) Define "partnership." Discuss in detail the provisions relating to a minor partner under the Indian Partnership Act,1932.
   b) Discuss Types of Partners with examples.

6. Writes notes on: (20)
   a) Unpaid seller and his rights
   b) Injunctions under the Specific Relief Act,1963

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0208M130

Candidate's Seat No :_____

B.Sc. Sem.-6 Examination

CC - 310

Environmental Science

August 2021

Time : 2-00 Hours] **[Max. Marks : 50**

Attempt any three ;

1. (A) List types of disasters and explain strategy for disaster mitigation. 7
   (B) Describe pre and post-disaster management for Earthquake. 7
2. (A) Discuss method for assessing risk while predicting disaster. 7
   (B) Describe pre and post-disaster management for Cyclone. 7
3. (A) Explain Kuznets curve for renewable & non-renewable resources. 7
   (B) How urbanization in developing countries is linked to environmental damage? 7
4. (A) Write note on Environmental ethics. 7
   (B) Explain economic aspect of environmental policy. 7
5. (A) Define Sustainable Development and strategies for its planning. 7
   (B) How Sustainable Development can be incorporated into economic reforms? 7
6. (A) Discuss concept and need for Sustainable Development. 7
   (B) Write note on Rio declaration. 7
7. (A) Give importance of soil reclamation and describe biological methods applicable. 7
   (B) Write detailed note on concept and ways for land use planning. 7
8. (A) Explain Cofferdam method for soil reclamation process. 7
   (B) Describes methods of site selection and evaluation of land. 7
9. Answer in short: (Any **eight**) 8

1. What is Ring of Fire?
a. Belt of volcanoes in the Circum Pacific region
b. Belt of volcanoes in the mid-continental region
c. Belt of volcanoes in the mid-atlantic region
d. None of the above

2. Which of the following rivers in Tripura experience tide
a. Gumti
b. Fenny
c. Howra
d. Khowai

3. Earthquakes occur when there is a sudden release of stored up energy in Earth's
A. inner core
B. outer core

P. T. O.

C. upper mantle
D. lower crust

4. Tremors that have occurred in Earth's crust are known as
A. Earthquakes
B. Volcanic eruptions
C. Bed eruptions
D. Volcano-Earth Quake

5. Instrument used to measure earthquake is known as_____
A. quake meter
B. quake graph
C. seismograph
D. typanicgraph

6. Which of these problems can be caused by floods?
a. Landslips
b. Sewage contamination
c. Destroyed crops
d. All of the above

7. Marketing ethics can be divided into normative and _____ branches.
a) moral
b) normative
c) descriptive
d) virtue

8. A central theme of corporate social responsibility is defined as
a) belief that the legal system defines ethical behaviour
b) development of inclusive codes of ethics
c) rules by which social rewards are attained
d) corporations have some responsibility to wider society that goes beyond the pursuit of profit

9.This is a form of ethical approach by which the rightness or wrongness of an action or decision is not judged to be exclusively based on the consequences of that action or decision:
a) Descriptive ethics.
b) Deontological ethics.
c) Social ethics.
d) Religious ethics.

10. This involves the setting of different prices for different groups of people:
a) Price gouging.
b) Price discrimination.
c) Price differential.
d) Price fixing.

11. This branch of ethics stresses the importance of developing virtuous principles, with 'right' character, and the pursuit of a virtuous life:
a) Virtue ethics.
b) Utilitarianism.
c) Normative ethics.
d) Teleological ethics.
Answer: A

12.This occurs when a company charges more than governments perceive is fair for their offerings:
a) Price gouging.
b) Price discrimination.
c) Price differential.
d) Price fixing.
Answer: A

13 Which option is correct, when we only accomplish two out of three pillars of Sustainable Development?
A) Economic + Environmental Sustainability = Viable
B) Social + Environmental Sustainability = Bearable
C) Social + Economic Sustainability = Equitable
D) None of the above

14. The word 'Sustainable Development' came into existence in the year?
A) 1992
B) 1978
C) 1980
D) 1987

15. The United Nation's Commission on Sustainable Development (CSD) was started by the UN General Assembly in the year.
A) 1995
B) 1994
C) 1993
D) 1992

16. Which of the option is not incorporated as sustainable development parameters?
A) Gender disparity and diversity
B) Inter and Intra-generation equity
C) Carrying capacity
D) None of the above

17. Meeting the needs of the present without compromising the ability of future generation to meet their own need' is given by:
A Brundtland
B Mahatma Gandhi
C Maathai
D Sunderlal Bahugana

P. T. O

18. Sustainable development will not aim at_____
A Social economic development which optimise the economic and societal benefits available in the present, without spoiling the likely potential for similar benefits in the future
B Reasonable and equitable distributed level of economic well being that can be perpetuated continually
C Development that meets the need of the present without compromising the ability of future generation to meet their own needs
D Maximising the present day benefits through increased resource consumption

19. Which landuse zone is being described below?
"This area contains back to back terraced housing. The streets are laid out in a linear, grid iron pattern"

(a) CBD
(b) Inner City
(c) Inner Suburbs
(d) Outer Suburbs

20. Residential development regulations can contribute to affordability problems in a community by
(a) encouraging high density developments
(b) using outdated standards
(c) requiring maximum dwelling size limits
(d) all of the above

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0208M131

Candidate's Seat No :_____

B.Sc. Sem.-6 Examination

CC - 310

Bio-Chemistry

August 2021

Time : 2-00 Hours] **[Max. Marks : 50**

Instructions: All questions in section - I carry equal marks.
Attempt any **THREE** questions in section - 1
Questions in section - II is compulsory

Total Marks: 50

Section - I

Q1. (A)	Define Sterilization. Explain the mode of action, uses & limitations of the following as sterilizing agents:	(14)
	i)Radiations	
	ii)Autoclave	
Q2.(A)	Discuss any five types of media with examples in detail.	(7)
(B)	Write any four important properties of an ideal disinfectant and discuss Chlorine as a chemical disinfectant	(7)
Q3. (A)	Define Generation Time. Explain Bacterial growth curve in detail.	(14)
Q4. (A)	Classify the bacteria based on their oxygen requirements, giving examples.	(7)
(B)	Discuss cultivation of Anaerobic bacteria	(7)
Q5. (A)	Discuss in detail the transmission, pathogenesis, symptoms, diagnostic tests & prevention of AIDS.	(14)
Q6. (A)	Write a note on Source, mode of action, uses and limitations of: Tetracycline & Sulpha drugs	(14)
Q7. (A)	Discuss the industrial production of: 1. Penicillin 2. Lysine	(14)
Q8. (A)	Explain the design of a Bioreactor with a labeled diagram	(7)
(B)	Write a brief note on types of fermentation process.	(7)
	SECTION - II	
Q9.	**Attempt any Eight Questions**	(16)
1.	What are photolithotrophs? Give one example.	
2.	What is the time and temperature used for Pasteurisation	
3.	What is culture media?	
4.	How do we sterilize Vaccines	
5.	Define TDT	
6.	What is Diauxic growth?	
7.	Define Barophile. Give an example.	
8.	Give the full form of IMViC	
9.	Name the vaccine used against Tuberculosis.	
10.	Define chemotherapeutic Index	
11.	Give any one factor which leads to drug resistance	

P. T. O.

12.	Name the diagnostic test for Typhoid.	
13.	What is the solvent used in Biotransformation of steroids	
14.	Name the two methods used in Vinegar production	
15.	Name the organism used in Penicillin production	
16.	What are HOPS?	

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0208M132

Candidate's Seat No :_____

B.Sc. Sem.-6 Examination

CC - 310

Computer Science

August 2021

Time : 2-00 Hours] **[Max. Marks : 50**

Instruction: All Questions in **Section I** carry equal marks
Attempt any **THREE** questions in **Section I**
Question IX in **Section II is COMPULSORY.**

Section I

Q-I Write the following:

(A) Explain evolution of operating system. [07]
(B) Explain need of operating system [07]

Q-II Write the following:

(A) Explain single user and multi user operating system. [07]
(B) Explain elements of operating system. [07]

Q-III Write the following:

(A) What is Paging?Explain in details. [07]
(B) What is segmentation?Explain in details. [07]

Q-IV Write the following:

(A) What is Demand paging? Explain in detail. [07]
(B) Explain Static partition and Dynamic partition in Contiguous memory allocation [07]

Q-V Write the following:

(A) Explain Round robil scheduling in CPU scheduling algorithm. [07]
(B) Explain Semaphores in process sychncronization. [07]

Q-VI Write the following:

(A) What is Inter process communication. [07]
(B) What is Critical section problem. [07]

Q-VII Write the following:

(A) What is Disk scheduling? Explain FCFC method. [07]
(B) Explain Characteristics of Device. [07]

Q-VIII Write the following:

(A) Explain Disk space management. [07]
(B) Explain CSCAN method in Disk scheduling algorithm. [07]

P. T. O

M132 - 2

Section II

Q IX Attempt any EIGHT MCQS **[08]**

1) Which of the following is not an operating system?

a. Windows
b. Linux
c. Oracle
d. DOS

2) When was the first operating system developed?

a. 1948
b. 1949
c. 1950
d. 1951

3) What else is a command interpreter called?

a. prompt
b. kernel
c. shell
d. command

4) What is the full name of FAT?

a. File attribute table
b. File allocation table
c. Font attribute table
d. Format allocation table

5) What is the mean of the Booting in the operating system?

a. Restarting computer
b. Install the program
c. To scan
d. To turn off

6) When does page fault occur?

a. The page is present in memory.
b. The deadlock occurs.
c. The page does not present in memory.
d. The buffering occurs.

7) Banker's algorithm is used?

a. To prevent deadlock
b. To deadlock recovery
c. To solve the deadlock
d. None of these

8) When you delete a file in your computer, where does it go?

a. Recycle bin
b. Hard disk
c. Taskbar
d. None of these

9) Which is the Linux operating system?

M132-3

b. Windows operating system
c. Open-source operating system
d. None of these

10) What is the full name of the DSM?

a. Direct system module
b. Direct system memory
c. Demoralized system memory
d. Distributed shared memory

11) What is the full name of the IDL?

a. Interface definition language
b. Interface direct language
c. Interface data library
d. None of these

12) If the page size increases, the internal fragmentation is also?..?

a. Decreases
b. Increases
c. Remains constant
d. None of these

13) Which of the following is a single-user operating system?

a. Windows
b. MAC
c. Ms-Dos
d. None of these

14) The size of virtual memory is based on which of the following?

a. CPU
b. RAM
c. Address bus
d. Data bus

15) If a page number is not found in the translation lookaside buffer, then it is known as a?

a. Translation Lookaside Buffer miss
b. Buffer miss
c. Translation Lookaside Buffer hit
d. All of the mentioned

16) Which of the following is not application software?

a. Windows 7
b. WordPad
c. Photoshop
d. MS-excel

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0208M133

Candidate's Seat No :_____

B.Sc. Sem.-6 Examination

CC - 310

Statistics

August 2021

Time : 2-00 Hours] **[Max. Marks : 50**

PAPER CODE AND NAME: STA -310 OPERATIONS RESEARCH
(New Course)

SECTION I (Attempt any three)

Q.1 A.	What is linear programming give its mathematical formulation also give it uses assumptions and limitations.	7
B.	Discuss the graphical method of solving linear programming problem	7
Q.2 A.	What is transportation problem explain it with suitable illustrations	7
B.	Describe the matrix minima method to obtain basic feasible solution	7
Q.3 A.	Describe Vogel's approximation method for solving transportation problem	7
B.	Explain assignment problem with suitable illustration	7
Q.4 A.	Explain Hungarian method of solving assignment problem	7
B.	Derive basic feasible solution of the following transportation problem by North -West corner rule.	7
Q.5 A.	Write differences between PERT and CPM	7
B.	Write a short note on critical path method	7
Q.6 A.	Explain terms (i) Optimistic time (ii) Pessimistic time (iii) Float time	7
B.	Explain with illustrations the following terms in reference to PERT (i) Activity (ii) Dummy activity	7
Q.7 A.	Write a note on Game theory.	7
B.	Explain Dominance rule of game theory.	7
Q.8 A.	Explain Simplex method.	7
B.	What is Operation Research? Explain its various applications.	7

P.T.O

M133 - 2

SECTION II

Q.9	Attempt any 8	8
1	In which method of solving transportation problem the unit cost of transportation is not taken into consideration. (i) VAM (ii) LCM (iii) NWCM (iv) HAM Method	
2	The outcome of the interaction of selected strategies of opponent in a game is called_____. (i) Income (ii) Profit (iii) Payoffs (iv) Gains	
3	What can you say about EST and LFT for the activities which lie on critical path? (i) EFT<LFT (ii) EFT>LFT (iii) EFT=LFT (iv) None of the above	
4	EST of any initial activity is_____. (i) Zero (ii) Zero+ te (iii) Non negative (iv) te	
5	Float time for any activities on a critical path is always_____. (i) Positive (ii) Non negative (iii) >LFT (iv) zero	
6	The feasible solution to a linear programming problem is_____. (i) Convex (ii) Negative (iii) Unknown (iv) Infinite	
7	Linear programming is of the most frequently used method of _____techniques. (i) Transportation problem (ii) Operations research	

	(iii) Correlation (iv) PERT CPM	
8	If three or more variables are there in a linear programming problem then _____method is used to solve it. (i) Graphical (ii) Complex (iii) Simplex (iv) All of the three	
9	Linear programming was first introduced by _____. (i) Karl Pearson (ii) George B. Danting (iii) Newton (iv) Spearman	
10	The values of the variables in linear programming problem are _____. (i) Negative (ii) Zero (iii) Only positive (iv) Non negative	
11	In linear programming x y greater than equal to zero are called_____. (i) Non negativity constraints (ii) Zero condition (iii) Objective function (iv) All of the above	
12	The most frequently used method when only two variables are involved in a linear programming problem is_____. (i) Simplex method (ii) Graphical method (iii) Vogel's method (iv) EMV Method	
13	The limited resources can be expressed in the form of _____in a linear programming problem. (i) Linear inequalities (ii) Objective function (iii) Optimum solution (iv) All of the three	
14	The non-negativity constraint asserts that the feasible region must be in the _____quadrant. (i) First (ii) Second (iii) Third (iv) Fourth	
15	The feasible solution to a linear programming problem is _____.	

	Convex Negative Unknown Infinite	
16	In linear programming problem the optimal solution of a bounded feasible region always exists at _____. Any point Vertex Origin All of the above	

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0208M134

Candidate's Seat No :_____

B.Sc. Sem.-6 Examination

CC - 310

Electronics

August 2021

Time : 2-00 Hours] **[Max. Marks : 50**

Instructions: (1) **All** Questions in Section-I carry equal marks.

(2) Attempt any **three** questions in **Section-I**

(3) Question **9** in **Section-II** is compulsory

SECTION –I

Que.1

(a) Name different Photosensitive devices. Explain photomultiplier in detail. [7]

(b) Write displacement transducer. Explain Linear Variable Differential Transformer Transducer (LVDT) with necessary diagrams. Write advantages and disadvantages of LVDT. [7]

Que.2

(a) Explain piezoelectric transducer. Write advantage and disadvantage of piezoelectric transducer [7]

(b) Explain thermistor. Explain its characteristics with necessary diagrams. Write two applications of thermistor. [7]

Que.3

(a) Write the methods to perform the inverse Z transform. Explain one of them. Determine the input sequence $x(n)$ if a system has input response $h(n) = \{1, 2, 3\}$ and output response $y(n) = \{1, 1, 2, -1, 3\}$. [8]

(b) Do as Directed : [6]

(i) Sketch the signal : $x(t) = \pi(2t + 7)$

(ii) Draw the block diagram representation for the response of the system.
$y(n) = x(n) + 3x(n-1) + 2x(n-2)$
If the input sequence is $x(n) = \{0, 1, 1, 2, 0, 0, 0 \ldots\ldots\}$, obtain the response of the system $y(n)$

P.T.O

Que.4

(a) Write the answers of following questions : [6]

(i) If $x_1(n) = \sin 5\pi t$, $x_2(n) = \sin 20\pi t$. Check the periodicity of $x_3(t) = x_1(t) + x_2(t)$.

(ii) Sketch the signal $x(t) = 4\left(t - \frac{1}{4}\right)$

(iii) Sketch the double sided amplitude and phase spectra for

$$x(t) = 12 \sin\left(10\pi - \frac{\pi}{6}\right) \quad -\infty < t < \infty$$

(b) Classify the systems. Explain the Causal and Linear systems. Check the linearity of following system.

$$3\frac{dy(t)}{at} + 5y(t) = 3x(t)$$ [8]

Que.5

(a) Derive Maxwell's equation and explain displacement current term. [7]

(b) Discuss the polarization of electromagnetic waves with necessary equations. [7]

Que.6

(a) Discuss polarization of electromagnetic waves [7]

(b) Derive Maxwell's equation and explain displacement current term. [7]

Que.7

(a) Obtain an equation for conductivity of semiconductor in terms of charge carriers densities and their mobilities. [7]

(b) Explain band theory from collective approach. [7]

Que.8

(a) Explain the motion of holes in n-type semiconductor due to diffusion process with necessary equations. [7]

(b) Discuss the motion of electron in the absence and presence of electric field. [7]

SECTION-II

Que.9 Attempt any Eight [8]

1) What kind of electrical displacement transducers are used to measure an angular displacement?

2) What is RTD?

3) Write examples of Analog transducer?

4) What is thermocouple?

5) Why thermistor is called transducer?

6) What are self-generating transducer?

7) Define unit step function.

8) Define ROC with reference to Z transform.

9) Write Maxwell equations.

10) What is insulator?

11) Write on advantage of digital signal processing?

12) What is Hysteresis?

13) Draw energy band diagram for conductor and insulator?

14) What is strain gauge?

15) What is P-type semiconductor?

16) Write S.I unit of hole or electron mobility?

0208M135

Candidate's Seat No : _____

B.Sc. Sem.-6 Examination

CC - 310

Botany

Time : 2-00 Hours] **August 2021** **[Max. Marks : 50**

નોંધ: (1) Section-I (કુલ 42 marks) માંથી કોઇ પણ 3ના જવાબ આપો

(2) Section- II (કુલ 8 marks) ફરજિયાત છે

(3) તમારા જવાબ ચોક્કી અને નામ નિર્દેશંવાળી આકૃતિ સહિત આપો

પ્ર1	ટૂંકનોંધ લખો:: 1) મેન અને બાયોસ્ફિઅર પ્રોગ્રામ 2) CFCs:સ્રોતો. અસરો અને ઉપાયો	07 07
Q2	Write notes on:1) EIA 2) વનસ્પતિ પર હવાના પ્રદૂષણની અસર	07 07
Q3	Write notes on :1) છટણી 2) ઊભા બગીચા	07 07
Q4	Describe : 1) બગીચા સંકલ્પનાના સિદ્ધાંતો 2) બૌદ્ધ બગીચા શૈલી	07 07
Q5	Write notes on:1) ધાર્મિક માન્યતામાં વનસ્પતિઓ 2) લોકવનસ્પતિશાસ્ત્રમા સંશોધનની પદ્ધતિઓ	07 07
Q6	Write notes on:1) પવિત્ર વાટિકાઓ 2) લોકવનસ્પતિશાસ્ત્ર- ઈતિહાસ અને વિકાસ	07 07
Q7	Write notes on: 1) કાષ્ટની ઓળખ 2) વન્યજીવન અને આરક્ષિત જૈવાવરણો	07 07
Q8	Write notes on: 1) ભારતમાં વનોના પ્રકાર 2) કાગળ ઉદ્યોગ	07 07

Section –II Total : 08 marks

Q1	અસિડ્વર્ષામાં ક્યા રસાયણો હોય છે?
Q2	ગ્રીનહાઉસ અસર એટલે શું?
Q3	વાડ એટલે શું?
Q4	રીપોટીંગ એટલે શું?
Q5	નગોડનું વૈજ્ઞાનિક નામ આપો.
Q6	અંઘેડીનો એક લોકવનસ્પતિશાસ્ત્રીય ઉપયોગ આપો.
Q7	વનોની બે ગૌણ પેદાશોના નામ આપો.
Q8	વનોનો એક પરિસ્થિતિકીય ફાયદો આપો.

P. T. O

M135 - 2

B. Sc. SEMESTER-VI, SUBJECT; BOTANY
PAPER-310
ECOLOGY, GARDENING, ETHNOBOTANY, FORESTRY

TIME: 02 hours MARKS:50

Instructions: (1) Attempt any three questions from Section-I (total 42 marks)
: (2) All questions are compulsory in Section- II (total 8 marks)
: (3) Illustrate your answers with neat and labeled diagrams

Q1	Write notes on: 1) Man and Biosphere programme 2) CFCs: Sources, effects and remedies	07 07
Q2	Write notes on:1) EIA 2) Effect of air pollution on vegetation	07 07
Q3	Write notes on :1) Pruning 2) Vertical gardens	07 07
Q4	Describe : 1)Principles of garden design 2) Buddhist Gardens	07 07
Q5	Write notes on:1)Plants in religious belief 2) Methods of ethnobotanical research	07 07
Q6	Write notes on:1) Sacred groves 2) Ethnobotany- history and development	07 07
Q7	Write notes on: 1) Identification of wood 2) Wildlife and Biosphere reserves	07 07
Q8	Write notes on: 1) Forest types of India 2) Paper industry	07 07

Section –II Total : 08 marks

Q1	Which chemicals does acid rain contain?
Q2	What is greenhouse effect?
Q3	What is a hedge?
Q4	What is repotting?
Q5	Give the scientific name of Nagod.
Q6	Give one ethnobotanical use of Anghedi.
Q7	Name two minor products of forests.
Q8	Give one ecological benefit of forests.

0208M136

Candidate's Seat No :_____

B.Sc. Sem.-6 Examination

CC - 310

Zoology

Time : 2-00 Hours] **August 2021** **[Max. Marks : 50**

સૂચના: 1. સેક્શન -1 ના દરેક પ્રશ્ન સમાન ગુણ ધરાવે છે.

2. સેક્શન -1 માંથી કોઇ પણ ત્રણ પ્રશ્નના ઉત્તર આપો.

3. સેક્શન -2 ના પ્રશ્નો ફરજિયાત છે.

સેક્શન- 1

પ્ર.-1	A. નોંધ લખો : વિષકારકતા	7
	B. નોંધ લખો : વિષના પ્રકાર	7
પ્ર.-2	A. ટૂંકનોંધ લખો : વિષકારકતાને અસર કરતા પરિબળો	7
	B. વર્ણવો: વિષને શરીરમાં પ્રવેશવાનાં માર્ગ	7
પ્ર.-3	A. સવિસ્તર નોંધ લખો : અંગ સંવર્ધન ટેકનીક	7
	B. નોંધ લખો: પેશી સંવર્ધનમાં અગત્યના રસાયણો	7
પ્ર.-4	A. સવિસ્તર નોંધ લખો : પેશી સંવર્ધન ટેકનીક	7
	B. વર્ણવો: પેશી સંવર્ધનનાં ફાયદા અને ગેરફાયદા	7
પ્ર.-5	A. નોંધ લખો: પાવલોવનો પ્રયોગ	7
	B. નોંધ લખો: બબૂનમાં સામાજીક વર્તણૂક	7
પ્ર.-6	A. સમજાવો : હેબીચ્યુએશન, ઇમ્પ્રિન્ટીંગ અને તેની પ્રાણીજીવનમાં અગત્યતા	7
	B. સમજાવો : સ્ટીકલબેક મત્સ્યમાં સંવનન વર્તણૂક	7
પ્ર.-7	A. સમજાવો: બાહ્યભ્રુણિય કલાઓ	7
	B. મરઘીમાં 21 કલાકનો ગર્ભવિકાસ આકૃતિસહ વર્ણવો.	7

P. T. O.

પ્ર.-8	A. મરઘીનાં 72 કલાકના ગર્ભની ફક્ત નામનિર્દેશવાળી આકૃતિ દોરો.	7
	B. નોંધ લખો : સસ્તનમાં જરાયુના પ્રકાર	7

સેક્શન-II

MCQs

પ્ર.9	1. વ્યાખ્યા આપો: વિષપદાર્થ 2. ક્ષુદવિષ નાં ઉદાહરણ આપો 3. પેશી સંવર્ધનમાં બફરનો ઉપયોગ જણાવો. 4. શબ્દભેદ આપો: LD_{50} અને LC_{50} 5. સામાજીક જીવનનું મહત્વ જણાવો. 6. બલૂનફ્લાયનું વૈજ્ઞાનિક નામ લખો. 7. આનમન એટલે શુ? 8. મરઘીનાં ઇંડા નો પ્રકાર જરદીના જથ્થા અને વહેંચણીના આધારે જણાવો.	8

ENGLISH VERSION

Instructions: 1. All questions in **Section-I** carry equal marks.
2. Attempt any **Three** questions in **Section-I.**
3. Questions in **Section-II** are **compulsory.**

SECTION-I

Q.-1	A. Write Note : Toxicity	7
	B. Write Note : Types of Poison	7
Q.-2	A. Write Short Note : Factors affecting toxicity	7
	B. Describe : Route of entry of toxin into body	7
Q.-3	A. Write note in detail : Organ culture technique	7
	B. Write Note : Important chemicals in tissue culture	7

Q.-4	A. Write note in detail : Tissue culture technique	7
	B. Describe : Advantages and disadvantages of Tissue culture	7
Q-5	A. Write Note : Pavlov's experiment	7
	B. Write Note : Social behavior in Baboon	7
Q-6	A. Explain : Habituation, Imprinting and its importance in life of animals	7
	B. Explain : Courtship behavior in Stickleback fish	7
Q-7	A. Explain : Extra embryonic membranes	7
	B. Describe 21 hours embryonic development in hen with figure	7
Q-8	A. Draw a labeled diagram of 72 hours embryo of hen.	7
	B. Write Note : Types of placenta in mammals	7

SECTION-II

MCQs

Q- 9	1. Define: Toxin 2. Give examples of cardiac poison 3. State use of buffer in tissue culture. 4. Differentiate term : LD_{50} and LC_{50} 5. State significance of social life. 6. Write scientific name of balloon fly. 7. What is flexure? 8. State type of egg of hen based on amount and distribution of yolk.	8

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Candidate's Seat No :_____

B.Sc. Sem.-6 Examination

CC - 310

Bio-Technology

Time : 2-00 Hours] **August 2021** **[Max. Marks : 50**

Paper 310: Environmental Biotechnology.

1. (A) Discuss various methods for solid waste treatment and give its importance. 7
   (B) Describe methods for testing drinking water. 7
2. (A) Describe Indian standards for safe drinking water. 7
   (B) Explain treatment of liquid waste by activated sludge process. 7
3. (A) Discuss the relationship between molecular structure and Biodegradability giving suitable examples. 7
   (B) Explain abatement of harmful wastes by Bioventing and Bioslurping. 7
4. (A) Describe material prone to biodeterioration and means to control it. 7
   (B) List heavy metals acting as pollutant and explain its sources and harmful Effects. 7
5. (A) Explain principle of microbial leaching and describe popular designs for mining by leaching. 7
   (B) Discuss biotechnological uses of Cellulose and Lignins as substrate. 7
6. (A) Explain sources and advantages of Methane and Hydrogen fuels. 7
   (B) Discuss principle of Microbially-enhanced Oil Recovery. 7
7. (A) Write a detailed note on Environmental Impact Assessment. 7
   (B) Explain harmful effects and controls of Sea-weed and algal blooms. 7
8. (A) Describe the sources of Green-house gases and its harmful effects. 7
   (B) Summarize importance of biodiversity and means to conserve it. 7

9. Answer the following (Any Eight) 8

Q-1 Which of the following approach is used for the treatment of solid wastes, in which waste is dumped into pits?

A Biofilters
B Incineration
C Landfills
D Anaerobic digestion

Q-2 How can Biotechnology contribute to waste treatment and environment management?

A Development of microorganism with novel capabilities of degradation.
B Development of Cleaner technologies which generate less pollutants
C Promote the use of recalcitrant chemical pesticides as biocontrol agents
D Both A and B

Q-3 Landfill sites can be useful in which of the following ways?

A As a source of Biogas and sites to develop landscape gardens
B Source of toxic and corrosive material
C Increase the population of disease vectors like flies
D All of these

Q-4 Which of the following is Not True about eutrophication?

A Promotes microbial and plant growth by providing anaerobic waste water treatment.
B Addition of organic matter and inorganic nutrients to the natural reservoirs like river.

P.T.O

C Addition of waste water into the river to promote aerobic digestion.
D Eutrophication sometimes raises the river water temperature.

Q-5 Find the correct statement.
A Xenobiotic compounds like halogenated and aromatic hydrocarbons are only toxic to the prokaryotes.
B Mostly recalcitrant xenobiotic compounds are hydrophilic in nature.
C Xenobiotic compounds never enter into the food chain and food web
D DDTs and PCB's have been found in human tissues in sublethal concentration due to the biomagnification phenomenon.

Q-6 Identify the correct pair.
A CHCl3 DDT and BHC - Halocarbons
B Recalcitrant xenobiotic compounds – Highly unstable
C BOD – Biodegradable oxygen demand
D BOD – estimate amount of chemically oxidisable organic matter present in water.

Q-6 The correct relation between Biochemical oxygen demand (BOD) and Chemical oxygen demand (COD) is given by_____?
A BOD>COD
B COD>BOD
C COD=BOD
D None of these

Q-7 BOD measures
A Biologically oxidizable organic matter.
B Number of pollutants in waste water.
C Industrial pollution.
D All of these.

Q-8 The term Municipal solid waste includes
A Mining wastes
B Agro-wastes
C Household, commercial and institutional wastes
D All of these

Q-9 Which of the following disadvantages are of in situ bioremediation?
A Low cost
B Seasonal variation of indigenous microbial activity due to environmental factors.
C Both A and B
D Includes minimal site disruption

Q-10 Which of the following waste disposal methods produce polluting gases?
A Landfill
B Incineration
C Bioventing
D Bioreactor

Q-11 The bioremediation technique includes contaminated solod materials + microorganisms + water formulated into slurry is called.
A Aerated lagoons
B Low -shear airlift bioreactor
C Fluidized- bed soil reactor
D All of these.

Q-12 At this stage of waste water treatment, settle sewage is formed
A Preliminary treatment
B Secondary treatment
C Primary treatment
D Sludge treatment

Q-13 During tertiary waste water treatment, phosphate is usually removed by
A Filtration
B Precipitation using lime or alum
C Lagooning
D Slow sand filters

Q-14 Microorganisms can remove metals by which of the following mechanism?
A Adsorption and precipitation
B Complexation
C Volatilization
D All of these

Q-15 _____ approach promotes biodegradation by stimulating indigenous microorganisms' growth at the contaminated site.
A In situ intrinsic bioremediation
B In situ engineered bioremediation
C Ex situ intrinsic bioremediation
D Ex situ engineered bioremediation

Q-16 Bioslurping in situ bioremediation technology includes
A Soil washing + vitrification
B Bioventing + vacuum enhanced pumping
C Land farming
D Soil vapour extraction

Q-17 _____ are the most common contaminants found in hazardous sites according to EPA
A PCBs
B Heavy metals
C VOCs
D All of these

Q-18 What is True about Bioventing?
A Injection of air into the groundwater to provide oxygen for groundwater remediation.

P. T. O.

B Needs water to receive air flow and get some humidity to be dispersed into dry soil
C Both A and B
D Promotes aeration of the unsaturated vadose zone of the contaminated soil to stimulate aerobic biodegradation.

Q-19 Carrots are used to absorb DDTs can be explained by ____ phytoremediation technique.
A Rhizofilteration
B Phyto stabilization
C Phytoaccumulation
D Phytovolatilization

Q-20 Bioleaching can be defined as
A Metals are dissolved from ore bearing rocks using microorganism.
B Recovery of low-grade ores which cannot be economically processed with chemical methods.
C Both A and B
D None of these

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Candidate's Seat No :_____

B.Sc. Sem.-6 Examination

CC - 310

Health-Hygiene

Time : 2-00 Hours] **August 2021** **[Max. Marks : 50**

HTH 310 Health finance and law

MARKS-50

1. (A) Explain in detail Medical tourism in the present contest. 7
   (B) Write note on ethics in medical profession and its importance. 7

2. (A) Explain Cashless medical treatment option available in India. 7
   (B) Explain the Medical Insurance in India. 7

3. (A) What are the objectives behind the preservation of Food Adulteration Act, 1954? 7
   (B) Describe laws to regulate addictive drugs in India. 7

4. (A) Why do we need Pharmacy Legislation? 7
   (B) Discuss important provisions in Drugs and Cosmetics Act, 1940. 7

5. (A) Discuss Professional Ethics described under Indian Medical Council Act, 1948. 7
   (B) Explain Dentists Act, 1948. 7

6. (A) Explain Indian Nursing Act, 1948. 7
   (B) Write detailed note on Indian Medical Council. 7

7. (A) Explain Punishment provided under Pre-natal Diagnostic Technique Act, 1994. 7
   (B) Explain Indian laws on sale of human organs. 7

8. (A) Discuss the Medical Termination Pregnancy Act, 1971. 7
   (B) Discuss Birth, Death and Marriages Registration Act. 7

9. Answer the Followings (Any eight) 8

1. Health means....
A.Physical-Fitness
B.Mental-Fitness
C. Well-being
D. All of above

2. Cost in health care means....
A.To the patients amount they pay out of pocket for health care services
B.Hospital Bill to be paid
C.Medical expenditure for treatment
D. None of Above

3. How does Economies apply to healthcare?
A.By studying scarce resources
B Distribution of resources among individuals
C. A and B both

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D. None of above

4. Why do we need health Insurance in present time?
A Because future is unpredictable
B.It helps at the time of Emergency
C.Medical Expenses are very high now a days
D. All of above

5. What do we mean by cashless treatment?
A Insurers need not to pay a single penny in cash
B. Insurers have to pay online bills through digital transactions
C. Poor need not to pay treatment cost
D None of above

6. Why India is famous for Medical Tourism?
A.Lower cost means lower quality of care
B. Fast recovery of patients health
C. The quality of care
D. Best medical practices using advance technology in comparison to foreign countries

7. What are the ethical issues relate to the medical profession.
A Autonomy
B. Justice
C . Beneficence
D All of above

8. Under the PFA Act, when is the food said to be adulterated.
A.If any ingredient is injurious to health
B. If it is obtained from diseased animal.
C. If spices are sold without their essence.
D. All of above

9. Import, manufacture, storage, sale or distribution of any food article which is adulterated or any adulterant which is injurious to health of is being punishable under
A.Prevention of food adulteration act
B. Sales of Goods Act
C. Indian Penal Code
D. A and C both

10. Who among the following is the chairman of Drug Technical Advisory Board?
A. The Drugs Controller of India
B. The President of Medical Council of India
C . The President of Pharmacy Council of India
D. The Director General of health services

11. The person in charge of state Drugs laboratory is....
A. Assistant Drugs Controller

B. Drug Controller
C . Government Analyst
D. Drug Inspector

12. The Drug and Magic Remedies (objectionable Advertisement) Act came into force in the year
A. 1954
B. 1955
C 1956
D. 1948

13. Which of the following is a "Magic Remedy"
A Talisman
B .Mantra
C .Kavacha
D All of the above

14. The main object of the Pharmacy Act is to..
A. Control the advertisement of drugs
B. Regulate the profession of Pharmacy
C. Prevent the infliction of unnecessary pain or suffering on animals
D. All of above

15. A person is called 'Registered Pharmacist if he is...
A. Holding diploma in Pharmacy
B. Having sufficient experience in Pharmacy Profession
C. Having his name entered in the state register of Pharmacists
D. Holding degree of Pharmacists

16. Coca, Hemp and Opium are defined under
A. The Pharmacy Act
B. The Drugs and Cosmetics Act
C. The Narcotic Drugs and Psychotropic Substance Act
D. The Poison Act

17 Cannabis means....
A. Hemp
B. Charas
C. Ganja
D. All of above

18. Contravention of any provisions of the Drugs (Price Control) Act shall be punishable with provision of the..
A. Drugs and Cosmetics Act, 1940
B The Narcotic Drugs and Psychotropic Substance Act, 1985
C Essential Commodities Act, 1955
D. Industries (Development and Regulation) Act, 1952

19. The Prevention of Cruelty to Animals Act was enacted in the year

M 138-4

A. 1940
B. 1950
C 1960.
D. 1970.

20. Which of the following does not come, under the cruelty to animals .
A. Experiments on animals for new discovery useful for saving human life with due care and permission
B. Willfully and unreasonably administering any injurious drug to animal
C. Treating any animal so as to subject it suffer unnecessary pain
D. Failure to provide sufficient food, drinking water and shelter to the animal by their owner