SH-I/BS/1101/19

B.Sc. 1st Semester (Honours) Examination, 2019-20

FORESTRY

Course ID : BS1101 **Course Code : SH-BS-1101**

Course Title : Information and Communication Technology

Time: 2 Hours **Full Marks: 50**

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Group-A

Very short answer type questions.

1. Answer *any ten* questions from the followings: 1×10=10

(i) Which of the following are input devices?

(a) Keyboard (b) Mouse

(c) Card Reader (d) All of these

(ii) Examples of output devices are

(a) VDU (b) Printer

(c) Speaker (d) All of these

(iii) Which of the following is also known as brain of computer?

(a) Control Unit (b) Central Processing Unit

(c) Arithmetic and Language Unit (d) Monitor

(iv) IBM stands for

(a) Internal Business Management (b) International Business Management

(c) International Business Machines (d) Internal Business Machines

(v) _____ translates and executes program at run timeline by line.

(a) Compiler (b) Interpreter

(c) Linker (d) Loader

(vi) RAM stands for

(a) Random Origin Money (b) Random Only Memory

(c) Read Only Memory (d) Random Access Memory

(vii) 1 Byte = ?

(a) 8 bits (b) 4 bits

(c) 2 bits (d) 9 bits

(viii) SMPS stand for

(a) Switched Mode Power Supply (b) Start Mode Power Supply

(c) Store Mode Power Supply (d) Single Mode Power Supply

(xi) The device used to carry digital data on analogue lines is called as

(a) Modem (b) Multiplexer

(c) Modulator (d) Demodulator

(x) VDU is also called

(a) Screen (b) Monitor

(c) Both (a) and (b) (d) Printer

(xi) BIOS stands for

(a) Basic Input Output System (b) Binary Input Output System

(c) Basic Input Off System (d) All of these

(xii) Father of "C" programming language

(a) Dennis Ritchie (b) Prof John Keenly

(c) Thomas Kurtz (d) Bill Gates

Group-B

Short answer type questions.

2. Answer *any ten* questions from the followings: 2×10=20

(a) Difference between Static RAM and Dynamic RAM

(b) Difference between System Software and Application Software

(c) Define A. V. Aids.

(d) Difference between DOS and Windows Operating System.

(e) Define MAN and WAN.

(f) What is liner communication model?

(g) What is BIOS?

(h) What is System Software?

(i) What is Stylus?

(j) Write down the name of two web browsers.

(k) Define GUI.

(l) Define Multimedia.

(m) Why MS-Excel is called spread sheet package?

(n) Define EBCDIC.

Group-C

Long type questions.

3. Write down in brief *any four* of the following: 5×4=20

(a) Describe Berlo's SMCR model.

(b) Write short notes on Network Topology.

(c) Describe the application of AV Aids.

(d) Describe the Block diagram of computer and define briefly.

(e) Write a short note on Video Conferencing.

(f) Write a short note on FOSS.

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SH-I/BS/1102/19

B.Sc. 1st Semester (Honours) Examination, 2019-20

FORESTRY

Course ID : BS1102 **Course Code : SH-BS-1102**

Course Title : Communication Skills and Personality Development

Time: 2 Hours **Full Marks: 50**

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Section-A

1. Answer any *ten* from the following questions: 1×10=10

(a) What do you mean by 'verbal communication'?

(b) What is formal communication?

(c) What do you mean by different communication skills?

(d) Give the definition of verbal communication.

(e) What is a tense?

(f) What are the different types of intonation?

(g) What is the example of words with silent?

(h) How to insert footnotes?

(i) What is conjunction?

(j) What is impromptu presentation?

(k) What do you mean by an abstract?

(l) What is a voice?

(m) From where is the word 'Communication' derived?

(n) What is a quasi-passive voice?

(o) What is a preposition?

Section-B

2. Answer any *ten* from the following questions: 2×10=20

(a) What is public speaking?

(b) What are the objectives of group discussion?

(c) What do you mean by summary and abstracting?

(d) What is visual card index?

(e) Write the disadvantages of loose or vertical card index.

(f) Define Kinesis.

(g) Write a short note on S-M-C-R Model.

(h) What do you mean by tone and their types? Explain with example.

(i) What is the use of passive and active voice?

(j) How do you cite a book in an essay?

(k) What are the different use of conjunctions?

(l) What do you mean by a group presentation?

(m) What are the 7 C's of effective communication?

(n) What is a precis?

(o) Why is the different uses of a verb?

Section-C

Answer any *four* from the following questions: 5×4=20

(a) Describe the different types of sentence patterns in English.

(b) Write a dialogue in any daily life situation between two friend.

(c) How do you write a good summary?

(d) How could an effective communication be made?

(e) Write a short note on basic intonation patterns?

(f) Give brief description of three types of abstract.

(g) Write a short note on bibliographic procedures and footnote.

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SH-I/BS/1103/19

B.Sc. 1st Semester (Honours) Examination, 2019-20

FORESTRY

Course ID : BS1103 **Course Code : SH-BS-1103**

Course Title : Seed Technology and Nursery Management

Time: 2 Hours **Full Marks: 50**

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Write a definition of *any ten* of the following questions: 1×10=10

(a) Seed

(b) Vegetative propagation

(c) Germinative energy

(d) Clone

(e) Viability

(f) Biological dormancy brake

(g) Define Orthodox seeds with example

(h) Seed dormancy

(i) Transplanting

(j) Seed production area

(k) Dormancy

(l) Scarification

(m) Temporary nursery

(n) Natural forest

(o) Soil pH

2. Answer *any ten* of the following questions: 2×10=20

(a) Explane Tetrazolium test.

(b) Types of Seed dispersal

(c) Hoeing Fruit and seed handling.

(d) Demerits of containerized nursery

(e) Write down 2 important nursery pests and diseases.

(f) Advantages of Sunken bed

(g) What are the purpose of seed storage?

(h) Listing of different treatments for breaking exogenous dormancy.

(i) Why site selection is important for forest permanent nursery establishment?

(j) Advantages of Clonal seed orchad

(k) Importance of seed in forestry

(l) Disadvantages of collection of immature forest seeds

(m) Give an example of four recalcitrant seed (Botanical Name).

(n) Find out the requirement of land for the nursery for planting Teak in 15 ha at the spacing of 5m X 2m. The size of polythene bag used is 15cm X 25cm. Where, 15cm X 25cm this size poly bag accommodated in a nursery bed 1250 (numbers).

(o) What are the purposes to control of moisture level for forest seed?

3. Write down in brief *any four* of the following: 5×4=20

(a) Define seed dormancy and its types. Explain treatments for dormancy breaking.

(b) What are the importance of seed in present day forestry?

(c) Draw a Layout of nursery with well label and define all the component.

(d) Elaborate seed Development with diagram.

(e) Advantages and Disadvantages of containerised nursery technique

(f) Scope of Forest nursery

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SH-I/Forestry/BS/1104/19

B.Sc. 1st Semester (Honours) Examination, 2019-20

FORESTRY

Course ID : BS1104 **Course Code : SH/BS/1104**

Course Title: Basic Mathematics

Time: 3 Hours **Full Marks: 70**

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.
Notations and symbols have their usual meaning.

Answer *any twenty* questions. 1×20=20

1. (a) If x and y are real numbers and $x - iy = 0, i = \sqrt{-1}$, find the values of x and y.

(b) If every term of an AP is increased by 3, Prove that the numbers thus obtained also form an AP.

(c) A polygon has 44 diagonals, find the number of sides of the Polygon.

(d) Find the middle term of the expansion of $\left(x + \frac{1}{x}\right)^8$.

(e) Prove that $sin\,\bar{}^1_x + cos^{-1}_x = \frac{\pi}{2}$.

(f) Find the value of $\sin\left(-\frac{11}{4}\pi\right)$.

(g) The third term of a 6P is 4. Find the product of its first five terms.

(h) Find the square root of $-8i,\ i = \sqrt{-1}$.

(i) Evaluate $\int \sin 3x \cos x\, dx$.

(j) What is the order of the matrix A^T where $A = [1\ 5\ 9\ 4\ 2]$.

(k) Without expanding find the value of the determinant $A = \begin{vmatrix} 2 & 3 & 5 \\ 4 & 6 & 10 \\ -1 & 2 & 3 \end{vmatrix}$.

(l) If $y = xe^x$ show that $x\frac{dy}{dx} = (1 + x)y$.

(m) Evaluate $\lim_{x\to 0} \frac{\sqrt{1+x^2}-1}{x^2}$.

(n) In a triangle ABC given $\angle A = 60°, \angle B = 45°$ and $a = 2\sqrt{3}$ unit find b where a and b have the usual meaning.

(o) Calculate the total no. of permutations with the letters of BANANA taking all together.

(p) There lie thirteen arithmetic means between the numbers 10 and 52. Obtain the common difference of the A.P.

(q) If in a triangle ABC, $\frac{a-b+c}{a} = \frac{b}{b+c-a}$, prove that $\angle C = 60°$.

(r) If $y = x + \frac{1}{x}$ find the points where $\frac{dy}{dx} = 0$.

(s) If $A = \begin{bmatrix} 1 & 0 & -1 \\ 2 & 3 & 1 \\ -1 & 2 & 3 \end{bmatrix}$ and $B = \begin{bmatrix} 3 & 0 & 2 \\ -1 & 2 & 0 \\ -3 & -1 & 1 \end{bmatrix}$ then find X such that A + X = B

(t) If $f(x) = \begin{matrix} 5x-4 & when & 0 < x \leq 1 \\ 4x^3 - 3x & when & 1 < x < 2' \end{matrix}$

verify whether $\lim_{x\to 1} f(x)$ exists.

(u) Find the value of $\int x^2 \log x \, dx$.

(v) Test whether the function $f(x) = x^3 - 6x^2 + 24x + 4$ has any maximum or minimum value with justification.

(w) $A = \begin{bmatrix} 4 & 2 \\ -1 & 1 \end{bmatrix}$ find $A - 3I_2$ with usual meaning of I_2.

(x) Using binomial theorem find the value of 9^5.

(y) Prove geometrically $\tan 45° = 1$

(z) Prove that $\cos 306° + \cos 234° + \cos 162° + \cos 18° = 0$.

(aa) If $\cos^{-1}\frac{1}{\sqrt{5}} = \theta$, find $cosec^{-1}\sqrt{5}$.

(bb) If $\sin 3 \propto = \cos 3\beta$ where α and β are both acute angles, find $\sin(\alpha + \beta)$.

(cc) For what value of *k*, the system of equations $\begin{matrix} x + 2y = 3 \\ 3x + ky = 7 \end{matrix}$ has no solution?

(dd) Write the expression for the sum of 1st *n* terms of the series $1^2 + 2^2 + 3^2 + \cdots$.

2. Answer *any ten* questions: 2×10=20

(a) If *a, b, c* are in AP, show that $(a + 2b - c)(2b + c - a)(c + a - b) = 4abc$.

(b) Find a complex number *z* so that $z(3 + 4i) = 2 + 3i$.

(c) Prove that $\sin 15° = \frac{\sqrt{3}-1}{2\sqrt{2}}$

(d) Examine whether there exists any term involving x^6 in the expansion of $\left(x + \frac{1}{x^2}\right)^n$.

(e) If in an examination an examinee has to obtain a minimum marks in each of 5 subjects, calculate in how many ways he will become unsuccessful.

(f) Find the value of x if $\sin^{-1}\cos\sin^{-1} x = \frac{\pi}{3}$.

(g) If in a triangle ABC $\sin A : \sin C = \sin(A - B) : \sin(B - C)$ then prove that a^2, b^2, c^2 are in AP.

(h) Find the value of $\lim_{x\to 0} \frac{2\sin x - \sin 2x}{x^3}$.

(i) If $X = \begin{bmatrix} 2 & 3 \\ -5 & 7 \\ -2 & 3 \end{bmatrix}, Y = \begin{bmatrix} 9 & -5 \\ 0 & 2 \\ -1 & 4 \end{bmatrix}$, find 2X + 3Y.

(j) If $f(x) = \tan^{-1}\sqrt{\frac{1+\sin x}{1-\sin x}}$, obtain $f'(x)$.

(k) If $x \cdot {}^{n}c_r = {}^{n}p_r$, find x where notations are usual.

(l) Taking suitable matrices, show that matrix multiplication is not commutative.

(m) Find explicitly the fourth term of the series $1 + \left(\frac{1}{2^p} + \frac{1}{3^p}\right) + \left(\frac{1}{4^p} + \frac{1}{5^p} + \frac{1}{6^p} + \frac{1}{7^p}\right) + \cdots$.

(n) Express $\begin{bmatrix} 1 & 2 & 3 \\ 3 & 4 & 5 \\ -5 & 6 & 7 \end{bmatrix}$ as the sum of a symmetric and a skew symmetric matrix.

(o) With usual notations, prove that ${}^{n}C_r + 2\,{}^{n}C_{r-1} + {}^{n}C_{r-2} = {}^{n+2}C_r$.

3. Answer *any five* questions: 6×5=30

(a) Find the sum to first *n* terms of the series $4 + 44 + 444 + \cdots$. 6

(b) With usual notations prove that ${}^{2n}P_n = 2^n\{1\cdot3\cdot5 \ldots (2n-1)\}$. 6

(c) If $y = \sqrt{x}$, find $\frac{dy}{dx}$ by definition. 6

(d) Obtain the maximum and minimum values of $f(x) = x^3 - 9x^2 + 15x - 3$ 3+3=6

(e) If $a \neq p, b \neq q, c \neq r$ and $\begin{vmatrix} p & b & c \\ a & q & c \\ a & b & r \end{vmatrix} = 0$

Find the value A $\frac{p}{p-a} + \frac{q}{q-b} + \frac{r}{r-c}$. 6

(f) Obtain the Adjoint and inverse of the matrix $A = \begin{bmatrix} 1 & 0 & 2 \\ 2 & 3 & 0 \\ 0 & 1 & 2 \end{bmatrix}$ if it exists. 4+2=6

(g) (i) Represent the following system A linear equations
$x + y+= 4,\ y - z = 1,\ 2x + y + 4z = 7$ in matrix notations. Test whether system is consistent.

(ii) When a system of linear equations is said to have infinitely many solutions? (3+1)+2=6

(h) The circum radius of a triangle is 10 cm and the angles are in the ratio 2 : 3 : 7, find the sides of a triangle. 6

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SH-I/SA/1101/19

B.Sc. 1st Semester (Honours) Examination, 2019-20

FORESTRY

Course ID : SA1101 **Course Code : SH-SA-1101**

Course Title : Introduction to Forestry

Time: 3 Hours **Full Marks: 70**

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Write a definition or short answer of *any ten* of the following: 1×10=10

(a) Forestry

(b) Joint forest management

(c) Shrub

(d) Forest density

(e) Vegetation

(f) Coppice

(g) Van Mohatsav

(h) Forest (Ecological)

(i) Social forestry

(j) Sapling

(k) Deciduas forest

(l) Virgin forest

(m) National Park

(n) VVK stands for _____.

(o) Ecology

(p) Pure forest

(q) United Nations Environment Programme - World Conservation Monitoring Centre divides the World's Forest in how many major type?

(r) Flower

(s) Silviculture

(t) FSI stands for _____.

(u) WWF stands for _____.

(v) World Forestry Day is celebrated on _____.

(w) How many Hotspots present in India?

(x) Mo EF & CC stands for _____.

(y) Van-Mohatsav celebrated on _____.

2. Write short note/define any ten of the following: 2×10=20

(a) Differentiates between agroforestry & Social forestry

(b) Differentiates between even and uneven aged stands

(c) Write a short note on Match (match box) industry of India.

(d) Write a short note on Paper industry of India.

(e) Write a short note on Boreal forest.

(f) Write a short note on FRI.

(g) Write a short note on IIRS.

(h) Temperate broad leaf forest

(i) Carbon sequestration

(j) What are the major factors influencing global forests distribution?

(k) Write a short note on about chapter II (of reserved forests) of Indian Forest Act, 1927.

(l) Write a short note on the Reserved forest.

(m) Differentiates between National Park and Sanctuaries

(n) Write a short note on Global warming.

3. Write down in brief *any six* of the following: 5×6=30

(a) Explain the role of forests in hydrology with diagram.

(b) Write in detail about Indian forestry before 1947.

(c) Write in detail direct and indirect benefits of forest.

(d) Forest Type of India (Champion & Seth)

(e) Write the notes on the FRI and IUCN.

(f) Bio-geographical region of India.

(g) World forest classification according to WWF

(h) What are the drawbacks of Forest Policy of 1894?

(i) Write in details chapter IV of Indian Forest Act, 1927.

(j) What factors influencing global forests distribution? Discuss any two of them.

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SH-I/SA/1102/19

B.Sc. 1st Semester (Honours) Examination, 2019-20

FORESTRY

Course ID : SA1102 **Course Code : SH-SA-1102**

Course Title : Principles of Agroforestry

Time: 2 Hours **Full Marks: 50**

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Write a definition or short answer of *any ten* of the following: 1×10=10

(a) Agri-silvicultural system

(b) Home Garden

(c) Alley Cropping

(d) Mulching

(e) Mono Cropping

(f) Write down 3 examples of Fodder tree species (Botanical Name).

(g) Community forestry

(h) Supplementary interaction

(i) Write down 2 examples of nitrogen fixing tree species (Botanical Name).

(j) Agri-silvi horticultural system

(k) Allelopathy

(l) Aquaforestry

(m) Windbreaks

(n) ICRAF stands for

2. Write short note/define *any ten* of the following: 2×10=20

(a) What is Pruning and what are the benefits of pruning in agroforestry practice

(b) Define mutualism with suitable example.

(c) Taungya

(d) Benefits of Aquaforestry

(e) What are the disadvantages of shifting cultivation?

(f) Advantages of Shelterbelt

(g) Belowground interactions in Agroforestry system

(h) Disadvantage of Horti-silviculture system

(i) Objectives of Social Forestry

(j) Agroforestry classification on the basis of arrangement of components

(k) What is Windbreaks? Write down 2 examples of Windbreaks tree species (Botanical Name).

(l) Advantages of Mulching

(m) Benefits of home garden

(n) Disadvantages of Agri-Silvicultural system

(o) Role of farm forestry on carbon sequestration

3. Write down in brief *any four* of the following: 5×4=20

(a) What are the basic objectives and goals of National Agroforestry Policy 2014?

(b) Difference between Agroforestry and Social forestry

(c) Role of women in Indian Agroforestry development

(d) Direct and indirect benefits of Agroforestry

(e) Components of Agroforestry

(f) How Agroforestry play role in Nutrient cycling and Microclimate amelioration?

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SH-I/NR/1101/19

B.Sc. 1st Semester (Honours) Examination, 2019-20

FORESTRY

Course ID : NR1101 **Course Code : SH-NR-1101**

Course Title : Introduction to Agronomy and Horticulture

Time: 2 Hours **Full Marks: 50**

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer *any ten* of the following questions: 1×10=10

(a) Whether tillage _____ soil bulk density. (Fill in the blanks)

(b) _____ % nitrogen found in urea. (Fill in the blanks)

(c) Largest cotton producing state in India is _____ (Fill in the blanks)

(d) West Bengal ranked _____ in Vegetable production. (Fill in the blanks)

(e) Apple belongs to _____ family. (Fill in the blanks)

(f) Zero tillage conserve soil _____ (Fill in the blanks)

(g) Write down two important varieties of mango

(h) Who is the father of horticulture?

(i) Botanical name of Ber (Indian jujube).

(j) Given two examples of fruit species with high vitamin C content

(k) Write down the botanical name of Wheat and Apple.

(l) How many Horticultural Zones present in India?

(m) Mango belongs to *anacardiaceae* family. True or False

(n) Grape is a tropical fruit. True or False

(o) N. P. K. stands for.

2. Answer *any ten* of the following questions: 2×10=20

(a) Differentiate between mono and sole cropping.

(b) What is Plantation crops? Write two examples of plantation crops with botanical name.

(c) Write down the objectives of Integrated Weed Management

(d) Importance of nutrient in plant growth

(e) Write short note on synthetic-fertilizer.

(f) Describe deferent types of manure in briefly.

(g) Write briefly on different types of irrigation.

(h) Write short note on plant growth regulator with example.

(i) Define INM and mention its component.

(j) What are the effect of training and pruning?

(k) Differentiate between soil fertility and productivity.

(l) What are the Advantages of application bio-fertilizers in agriculture field?

(m) Classification of weeds based on life-cycle.

(n) Write the advantage of Inter cropping and Sequential cropping.

(o) Importance of water in Plant growth.

3. Answer *any four* of the following question with maximum 200 words: 5×4=20

(a) Objectives of training and pruning. Write short note on different types of training. 2+3=5

(b) Define Horticulture. Importance of horticulture crops. Write any one classification of horticulture crops with examples. 1+1·5+2·5=5

(c) What is Integrated Weed Management? Write principle and advantage of IWM. 2+3=5

(d) Write the characteristics features of weeds, damage due to weeds and benefits of weeds. 5

(e) Describe different types of irrigation techniques used in agricultural and horticultural crop production. 5

(f) Describe different layout system of orchards. What are the main objectives of layout? 5

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SH-I/NR/1102/19

B.Sc. 1st Semester (Honours) Examination, 2019-20

FORESTRY

Course ID : NR1102 **Course Code : SH-NR-1102**

Course Title : Forest Extension and Community Forestry

Time: 2 Hours **Full Marks: 50**

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Write a definition or short answer of *any ten* of the following: 1×10=10

(a) Community forestry

(b) Abbreviation- FDCs

(c) Forest Extension Education

(d) Type of Education

(e) FLD stands for

(f) Abbreviation-KVK

(g) Write down the two instruments used in forestry extension programs.

(h) ND stands for

(i) JFM stands for

(j) Strip plantation

(k) Audio-Visual aids

(l) Participatory Rural Appraisal

(m) Write down the botanical name of two good fodder trees species.

(n) Define wallcharts.

(o) Van Mohatsav celebrated on _____. (fill in the blank)

2. Write short note/define *any ten* of the following: 2×10=20

(a) Steps in developing a forestry extension program

(b) Difference between Formal Education and Extension Education

(c) Functions of Van Vigyan Kendras in forest conservation

(d) Importance of Joint Forest Management in forest conservation

(e) Elements of forest extension education

(f) Channels of communication

(g) Needs of forest extension education in West Bengal

(h) Advantages of Audio-Visual aids in forest extension program

(i) Advantages of Mass methods

(j) Importance of JFM

(k) Community woodlots

(l) Write down the four basic elements in the communication process.

(m) Role of co-operative societies in extension program

(n) Use of Blackboard or Chalkboard in forest extension program

(o) Disadvantages of projected aids.

3. Write down in brief *any four* of the following: 5×4=20

(a) Scope and necessity of community forestry

(b) Discuss the characteristic of staff to serve and organize extension programs.

(c) Objective and genesis of Rural Development

(d) Principles and Scope of Forest Extension Education

(e) What do you mean by social forestry? Discuss social forestry for provisioning services.

(f) Define forestry and discuss the importance of people in forest conservation.

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