VI-SEMESTER

DSC I (F), PAPER VII

PUBLIC HEALTH

MODEL PAPER

I. Plan a Low cost recipe and calculate two nutrients of importance. (5m)

II. Assess your own anthropometric measurement and write a brief report on it. (5m)

III. Audio Visual Aids (12m)

IV. Record (3 m)

VI SEMESTER

DSE I (E), PAPER VIII

FOOD PRESERVATION

MODEL PAPER

1. Write a brief introduction of Squash/ Jam/ Jelly/ Pickle/ Sauces (5m)
2. Write the method of preparation of given Squash/ Jam/ Jelly/ Pickle/ Sauce (5m)
3. Preparation and Display (12m)
4. Record (3m)

DSC – 1 F

Semester – VI: Paper-BS 603 (Theory): Nutrition and Immunology

(Core) **(1 Credits; 2 Hr/week)**

QUESTION BANK

Duration 2 hours **Max. Marks 25**

1. Write the Principles for the following experiments **5 Marks**

a. Estimation of calcium by titrimetry
b. Estimation of iron by phenanthroline method.
c. Estimation of vitamin C using 2, 6 -dichlorophenol indophenol method.
d. Isolation of total lipids by gravimetric method.
e. Determination of iodine value of fats and oils.
f. Determination of acid value of fats and oils.
g. Determination of blood group
h. ODD
i. ELISA

2. Major Experiment **10 Marks**

a. Estimation of calcium by titrimetry
b. Estimation of iron in apple juice by phenanthroline method.
c. Estimation of vitamin C by 2, 6 -dichlorophenol indophenol method.
d. Determination of iodine value of the given fat/oil sample.

3. Minor Experiment **5 Marks**

a. Isolation of total lipids by gravimetric method.
b. Determination of acid value of an oil.
c. Blood group determination

4. Viva-Voce and Record **5 Marks**

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DSE – 1 F

Semester – VI: Paper-BS 606 A (Practicals): Microbiology and r-DNA Technology

(1 Credits; 2 Hr/week)

(Elective)

QUESTION BANK

Duration 2 hours **Max. Marks 25**

1. Write the Principles for the following experiments **5 Marks**

a. Sterilization methods.
b. Isolation of pure cultures by Streak plate method
c. Gram staining.
d. Motility of bacteria by hanging drop method.
e. Assay of bacterial growth.
f. Antibiotic sensitivity by paper disc method.
g. Gene cloning
h. Preparation of competent cells

2. Major Experiment **10 Marks**

a. Motility of bacteria by hanging drop method
b. Bacterial growth curve
c. Antibiotic sensitivity by paper disc method

3. Minor Experiment **5 Marks**

a. Isolation of pure cultures by Streak plate method
b. Isolation of pure cultures by Serial dilution method
c. Identification of the bacteria by Gram staining

4. Viva-Voce and Record **5 Marks**

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DSE – 1 F

Semester – VI: Paper-BS 606 B (Practicals): Biotechnology

(Elective) **(1 Credits; 2 Hr/week)**

QUESTION BANK

Duration 2 hours **Max. Marks 25**

1. Write the Principles for the following experiments **5 Marks**

a. Initiation of callus
b. Micropropagation of plants
c. Cell counting
d. Isolation of microbes from contaminated foods
e. Microbial degradation of organic matter
f. Nodulation test for rhizobia
g. Efficacy testing for biopesticides
h. solid waste treatment
i. Waste water treatment
j. Production of hydrogen and methane

2. Major Experiment **10 Marks**

a. Micropropagation of plants
b. Preparation of animal cell culture media
c. Isolation of microbes from soil / water /bread

3. Minor Experiment **5 Marks**

a. Efficacy testing (nodulation test) for rhizobia)
b. Efficacy testing for biopesticides
c. Cell disaggregation

4. Viva-Voce and Record **5 Marks**

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B.Sc (CBCS) Botany: III Year
Semester-VI
Paper-VI: Plant Physiology

Time : 21/2 hrs **Practical Question Bank** **Max. marks: 25**

I. Major Experiment: (10 marks)

1. Determination of Osmotic potential of vascular sap- plasmolytic method.
2. Determination of Catalase activity – Potato, tubers by titration method.
3. Separation of Chloroplast pigments by paper chromatography.
4. Estimation of proteins by Biuret Method.

II. Minor Experiment: (7 marks)

1. Determination of Stomatal frequency using leaf epidermal peel/impressions.
2. Determination of Rate of transpiration by Cobalt chloride method.

III. Identify and Comment on: A, B & C (3x2=6 Marks)

1. Micronutrient Deficiency
   a) Iron (Fe)
   b) Manganese (Mn)
   c) Boron (B)
   d) Zinc (Zn)
   e) Molybdenum (Mo)
   f) Copper (Cu)

2. Macronutrients Deficiency
   a) Nitrogen (N)
   b) Phosphorus (P)
   c) Potassium (K)
   d) Calcium (Ca)
   e) Magnesium (Mg)
   f) Sulfur (S)
3. C3, C4 and CAM plants.
   a) C3 plant from surroundings; identify with morphological & anatomical features
   b) C4 plant from surroundings; identify with morphological & anatomical features
   c) Any CAM plant from surroundings; identify with morphological & anatomical features
   d) Kranz Anatomy - Slide

IV. Record (2marks)

B.Sc (CBCS) Botany-III Year
Semester-VI : Elective III
Tissue Culture and Biotechnology

Time: 2 1/2 hrs **Practical Question Bank** **Max. marks : 25**

I. Major Experiment (1x9=9)

1. Isolation of DNA
2. Preparation of plant tissue culture medium.
3. Production of synthetic seeds /Encapsulation of embryo

II. Minor Experiment (1x5=5)

1. Callus/ Micropropagation/Multiple shoots
2. Anther culture
3. PCR – operation
4. Demonstration of Micropropagation
5. Demonstration of multiple shoots

III. Spotters (3x3=9)

A. Vaccines
B. Antibiotics
C. Gene transfer methods/ instruments
D. Autoclave
E. Laminar air flow
F. Hot air oven
G. Incubator.

4. Record (2 marks)

B.Sc (CBCS) Botany-III Year
Semester-VI : Elective - IV
Seed Technology

Practical Question Bank

Time: 2 1/2 hrs **Max. marks : 25**

1. Major Experiment. (9marks)
   a) Estimation of amylase activity in germinating seeds.
   b) Seed viability test by triphenyl tetrazolium chloride (TTC).

2. Minor Experiment. (5marks)
   a) Dissection of Dicot
   b) Monocot embryo
   c) Methods to break Seed dormancy
   d) Seed dressing.
   e) Pollen viability test
   f) Harvesting methods of Cotton
   d) Harvesting methods of Groundnut

3. Spotters (3x3=9marks)
   a). Emasculation
   b). Bagging
   c). Germination of seeds.
   d). Importance of rice seeds.
   e) Importance of cotton seeds
   f) Importance of sunflower seeds
   g) Biofertilizers
   h) Fungicides
   i) Seed bank

4. Record (2marks)

Data related Laboratory work & Study visits to research institutes, seed tests and certification laboratories and seed banks.

Mobile Applications Lab BS605

Practical 2 Hours/Week 1 credit

1. Create the Screen for the Hello World App
2. Develop a mobile app to Create Good Morning Translator App
3. Design a mobile app to change the Screen's Background Image
4. Create a mobile app for layout components and Color Blocks
5. Design the mobile app for the Kilometer Converter
6. Create mobile app to calculate Test Average
7. Develop a mobile app to demonstrate Range Checker
8. Develop a mobile app for Grader App
9. Design a mobile app to demonstrate checkbox components
10. Demonstrate a mobile app for while loop
11. Design a mobile app to Calculate Sum of Consecutive Numbers
12. Design a mobile app to create Lights
13. Design a mobile app to demonstrate lists
14. Design a mobile app to validate an Email Address
15. Design a mobile app to display images of all states and union territories in India
16. Design a mobile app of your college having college information, features, events and placements

PHP Programming BS606

Practical 2 Hours/Week 1 credit

1	a) Write a PHP script to find the factorial of a given number. b) Write a PHP script to find the sum of digits of a given number.
2	a) Write a PHP script to find whether the given number is a prime or not. b) Write a PHP script to demonstrate the use of break, continue statements using nested loops.
3	a) Write a PHP script to display the Fibonacci sequence with HTML page. b) Write a PHP script to create a chess board.
4	a) Write a PHP script using built-in string function like strstr(), strops(), substr_count(), etc... b) Write a PHP script to transform a string to uppercase, lowercase letters, make a string's first character uppercase.
5	a) Write a PHP script that inserts a new item in an array in any position. b) Write a PHP function to check whether all array values are strings or not.
6	a) Write a PHP script to count number of elements in an array and display a range of array elements. b) Write a PHP script to sort a multi-dimensional array set by a specific key.
7	a) Write a PHP script using a function to display the entered string in reverse. b) Write a PHP script using function for sorting words in a block of text by length.
8	a) Write a PHP script for creating the Fibonacci sequence with recursive function. b) Write a PHP script using pass by value and pass by reference mechanisms in passing arguments to functions.
9	a) Write a PHP script to demonstrate the defining and using object properties. b) Write a PHP script to demonstrate the inheritance.
10	a) Write a PHP script to demonstrate the object overloading with _get(), _set(), and _call(). b) Write a PHP script to demonstrate the overloading property accesses with _get() and _set().
11	a) Write a PHP script to demonstrate the method overloading and method overriding mechanisms. b) Write a PHP script to demonstrate the use of final classes and final methods.
12	a) Write a PHP script to demonstrate the use interfaces. b) Write a PHP script using constructors and destructors.
13	Write a PHP application to handling HTML forms with PHP script.
14	a) Write a PHP script to create a file, write data into file and display the file's data. b) Write a PHP script to check and change file permissions, copying, renaming and deleting files.
15	a) Write a PHP application for connecting to MySQL and reading data from database table. b) Write a PHP application for inserting, updating, deleting records in the database table.
16	Write a PHP application for student registration form.

Information Security and Cyber Laws Lab BS606

Practical 2 Hours/Week 1 credit

1. Demonstrate the use of Network tools: ping, ipconfig, ifconfig etc...
2. Demonstrate the use of Network tools: tracert, arp, netstat, whois etc...
3. Use of Password cracking tools: John the Ripper, Ophcrack.
   Verify the strength of passwords using these tools.
4. Write a program for performing encryption and decryption operations of Caesar cipher.
5. Write a program for performing encryption and decryption operations of Rail cipher.
6. Write a program for performing encryption and decryption operations of Monoalphabetic cipher.
7. Write a program for performing encryption and decryption operations of Playfair cipher.
8. Write a program for performing encryption and decryption operations using Transposition technique.
9. Use nmap to analyze a remote machine.
10. Use zenmap to analyze a remote machine.
11. Use Burp proxy to capture and modify the message.
12. Demonstrate sending of a protected word document.
13. Demonstrate sending of a digitally signed document.
14. Demonstrate sending of a protected worksheet.
15. Demonstrate use of steganography tools.
16. Demonstrate use of gpg utility for signing and encrypting purposes.

FACULTY OF SCIENCE

BSc – III Year- Sem VI (Practical Examination)

Subject: CHEMISTRY **Paper –VIII (Physical Chemistry)**

Question Bank

(With effect from 2018-19)

Duration: 3 h **Max. Marks: 25**

Question Paper Pattern:

A. Question for Principle Writing

B. Question for Performing Experiment

A. Questions for the Principle Writing:

Any one among the following may be given:

1. Determination of specific reaction rate of the hydrolysis of methyl acetate catalyzed by hydrogen ion at room temperature.
2. Determination of rate of decomposition of hydrogen peroxide catalyzed by $FeCl_3$.
3. Determination of given concentration of ferrous ammonium sulphate solution by itspotentiometric titration with potassium dichromate.
4. Determination of given concentration of silver nitrate by potentiometric titration of KCl vs. $AgNO_3$.
5. Determination of the concentration of the given acid by pH metric titration of strong acid (HCl) against strong base
6. Determination of acid dissociation constant (K_a) of weak acid by pH metric titration of weak acid(acetic acid) with strong base(NaOH).
7. Determination of overall order: Saponification of ethyl acetate with NaOH by conductance measurements.

B. Question for Performing Experiment:

1. Determinethe specific reaction rate of the hydrolysis of methyl acetate catalyzed by hydrogen ion at room temperature. You are provided with 0.5 M NaOH solution and methyl acetate.
2. Determinethe rate constant of decomposition of hydrogen peroxide catalyzed by $FeCl_3$. You are provided with 0.02M $KMnO_4$ solution to estimate.
3. Determination of given concentration of ferrous ammonium sulphate solution by its potentiometric titration with the given M/60 potassium dichromate solution.
4. Determinethe given concentration of silver nitrate by potentiometric titration of 0.1 M KClvs the given $AgNO_3$ solution.

5. Determine the concentration of the given acid by pH metric titration of strong acid (HCl) against strong base (NaOH). You are provided with 0.1M NaOH solution.
6. Determine the acid dissociation constant (K_a) of given weak acid (acetic acid) by pH metric titration of weak acidwith 0.1 M strong base(NaOH) provided.

Scheme of Valuation:

A.	**Principle Writing:**	**05 Marks** (Brief principle with necessary equations, model graph)
B.	**Experiment:**	**15 Marks** **Experiment performance with tabulation – 06 Marks** (a minimum of 5 sets of readings in a non-instrumentation experiment or 10 sets of readings in case of instrumentation experiment) **Graph – 05 Marks** **Calculations –04 Marks** **Result – 01 Mark**
C.	**Record and Viva:**	**05 Marks**
	TOTAL:	**25 Marks**

B.Sc. VI Semester Practical Examination February/March 2019

Question Bank

Paper : VII

Organic Chemistry

Question No. I. Identify the functional group present in the given organic compound

Identify the functional group present in the given organic compound by performing the ignition test, physical constant (M.P. / B.P.), solubility, functional group tests (minimum **two** tests) and report the functional group for the given compound. Prepare two solid derivatives of the compound and submit.

Organic compounds :

1. Glucose
2. Benzoic acid
3. Phenol
4. β-Naphthol
5. Aniline
6. Benzaldehyde
7. Acetophenone
8. Benzamide
9. Ethyl benzoate
10. Nitrobenzene
11. Naphthalene
12. Urea
13. Thiourea

Question No. II. Determine the structure of an organic compound based on the given spectral data.

The spectral data for five compounds given below :

Organic compound – A :

IR (ν) : 2950, 700 cm^{-1}

^{1}H-NMR (δppm) : 1.0 (t, 3H), 2.5 (q, 2H)

Mass (m/z) : 108 ($M^{+\cdot}$), 110 (M+2), 29 (base peak)

The ratio of $M^{+\cdot}$ peak and M+2 peak intensity is 1:1.

Organic compound – B :

IR (ν) : 3050, 1690, 1600, 750, 690 cm^{-1}

^{1}H-NMR (δppm) : 2.1 (s, 3H), 7.2 (m, 3H), 7.8 (m, 2H)

Mass (m/z) : 120 ($M^{+\cdot}$), 105 (base peak), 77, 43, 15

PTO

Organic compound – C :

IR (ν) : 3500 (broad), 1600, 750, 690 cm^{-1}

^{1}H-NMR (δppm) : 7.2 (m, 5H), 7.8 (s, 1H, D_2O exchangeable)

Mass (m/z) : 94 ($M^{+\cdot}$), 77 (base peak)

Organic compound – D :

IR (ν) : 2950, 1720, 1100 cm^{-1}

^{1}H-NMR (δppm) : 1.2 (t, 3H), 2.2 (s, 3H), 3.5 (q, 2H)

Mass (m/z) : 88 ($M^{+\cdot}$), 60, 43(base peak), 29, 15

Organic compound – E :

IR (ν) : 3500 (broad), 3050, 1700, 750, 690 cm^{-1}

^{1}H-NMR (δppm) : 7.2 (m, 3H), 7.8 (m, 2H), 10.2 (s, 1H)

Mass (m/z) : 122($M^{+\cdot}$), 105(base peak), 77

B.Sc. VI Semester Practical Examination February/March 2019

Paper : VII

Organic Chemistry

Scheme of valuation

Time of Duration : 3 Hours **Max Marks : 25**

Question No. I : Identify the functional group present in the given organic compound **13 Marks**

Ignition Test : 01
Physical constant : 01
(M.P. / B.P.)
Solubility : 04
Two Functional Group Tests : 04
(2 x 2)
One Derivative : 02
Report : 01

Question No. II : Determine the structure of an organic compound based on the given spectral data **07 Marks**

Question No. III : Record and Viva **05 Marks**

Total **25 Marks**

END SEMESTER PRACTICAL EXAMINATION
SEMESTER 6
CLINICAL NUTRITION AND DIETETICS

PAPER VIII- ADVANCED DIETETICS

Date: Max Marks:25
Time: Batch:

1. Prepare Lunch or Dinner from theplanned therapeutic diet

   A or B or C or D as indicated

   A) Congestive Heart Failure-Energy (1700 Kcal), Fat and Sodium

   B) Type 1 Diabetes- Energy (1800 Kcal), Carbohydrate and Protein

   C) Chronic Renal failure (Dialysis) – Energy (1700 Kcal), Protein and Sodium

   D) Hyperlipidemia- Energy (2000 Kcal), Protein and Fat

   a) Menu (5 Marks)

   b) Appearance and taste (7 Marks)

   c) Display (4 Marks)

2. Write briefly about the condition (6 Marks)

3. Practical Record (3 Marks)

END SEMESTER PRACTICAL EXAMINATION
SEMESTER 6
CLINICAL NUTRITION AND DIETETICS

PAPER VII –DIET THERAPY

Date: Max Marks :25
Time: Batch:

1. Plan the given therapeutic diet and calculate the Nutritive value

   A or B or C or D as indicated

A) Burns-Energy (2800Kcal), Carbohydrate and Protein

B) Cancer- Energy (2200Kcal), Carbohydrate and Protein

C) Surgery – Energy (1700Kcal), Protein and Fat

D) Influenza- Energy (2000Kcal), Protein and Fat

   a) Menu (5 Marks)
   b) RDA and Dietary Prescription (4 Marks)
   c) Nutritive value of the diet Planned (10 Marks)

2. Viva (3 Marks)

3. Practical Record (3 Marks)

Networks Lab — BS605

Practical | 2 Hours/Week | 1 credit

1. Write a program to create a socket and implement connect function.
2. Write a program to get MAC address.
3. Write a program to display hello world using signals.
4. Write a program for socket pair system call using IPC.
5. Write a program to implement the sliding window protocol.
6. Write a program to identify the category of IP address for a given IP address.
7. Write a program to print details of DNS host.
8. Write a program to implement listener and talker.
9. Write a program to implement TCP echo using client-server program.
10. Write a program to implement UDP echo using client-server program.
11. Write a UDP client-server program to convert lowercase letters to uppercase letters.
12. Write a TCP client-server program to convert a given string into reverse.
13. Write a UDP client-server program to convert a given string into reverse.
14. Write a program to implement TCP iterative client-server program.
15. Write a program to implement time service using TCP client-server program.
16. Write a program to implement time service using UDP client-server program.

Note : Write above program using C language on Unix/Linux systems.

PHP with MySQL Lab — BS606

Practical | 2 Hours/Week | 1 credit

1	a) Write a PHP script to find the factorial of a given number. b) Write a PHP script to find the sum of digits of a given number.
2	a) Write a PHP script to find whether the given number is a prime or not. b) Write a PHP script to demonstrate the use of break, continue statements using nested loops.
3	a) Write a PHP script to display the Fibonacci sequence with HTML page. b) Write a PHP script to create a chess board.
4	a) Write a PHP script using built-in string function like strstr(), strops(), substr_count(), etc... b) Write a PHP script to transform a string to uppercase, lowercase letters, make a string's first character uppercase.
5	a) Write a PHP script that inserts a new item in an array in any position. b) Write a PHP function to check whether all array values are strings or not.
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7	a) Write a PHP script using a function to display the entered string in reverse. b) Write a PHP script using function for sorting words in a block of text by length.
8	a) Write a PHP script for creating the Fibonacci sequence with recursive function. b) Write a PHP script using pass by value and pass by reference mechanisms in passing arguments to functions.
9	a) Write a PHP script to demonstrate the defining and using object properties. b) Write a PHP script to demonstrate the inheritance.
10	a) Write a PHP script to demonstrate the object overloading with _get(), _set(), and _call(). b) Write a PHP script to demonstrate the overloading property accesses with _get() and _set().
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13	Write a PHP application to handling HTML forms with PHP script.
14	a) Write a PHP script to create a file, write data into file and display the file's data. b) Write a PHP script to check and change file permissions, copying, renaming and deleting files.
15	a) Write a PHP application for connecting to MySQL and reading data from database table. b) Write a PHP application for inserting, updating, deleting records in the database table.
16	Write a PHP application for student registration form.

Web Technologies Lab BS606

Practical 2 Hours/Week 1 credit

1	a. Write a HTML program using basic text formatting tags, <hn>, <p>,
	, <pre>.
	b. Write a HTML page for Example Cafe using above text formatting tags.

2	a. Write a HTML program using presentational element tags <b>, <i>, <strike>, <sup>, <sub>, <big>, <small>, <hr> b. Write a HTML program using phrase element tags <blockquote>, <cite>, <abbr>, <acronym>, <kbd>, <address>
3	a. Write a HTML program using different list types. b. Write a HTML page that displays ingredients and instructions to prepare a recipe.
4	a. Write a HTML program using grouping elements and . b. Write a HTML Menu page for Example cafe site.
5	a. Write a HTML program using images, audios, videos. b. Write a HTML program to create your time table.
6	Write a HTML program to create a form using text inputs, password inputs, multiple line text input, buttons, check boxes, radio buttons, select boxes, file select boxes.
7	Write a HTML program to create a frames and links between frames.
8	Write a HTML program to create different types of style sheets.
9	Write a HTML program to create CSS on links, lists, tables and generated content.
10	Write a HTML program to create your college web site using multi column layouts.
11	Write a HTML program to create your college web site using for mobile device.
12	Write a HTML program to create login form and verify username and password using DOM
13	a. Write a JavaScript program to calculate area of rectangle using function. b. Write a JavaScript program to wish good morning, good afternoon, good evening depending on the current time.
14	a. Write a JavaScript program using switch case?. b. Write a JavaScript program to print multiplication table of given number using loop.
15	a. Write a JavaScript programs using any 5 events. b. Write a JavaScript program using JavaScript built in objects.
16	Write a JavaScript program to create registration form and validate all fields using form validation

B.Sc GENETICS III YEAR
SEMESTER-VI
DISCIPLINE SPECIFIC ELECTIVE (DSE- 3F)

BS605: POPULATION GENETICS AND EVOLUTION

QUESTION BANK FOR PRACTICALS

Duration= 2 hours **Total = 25M**

I. MAJOR PRACTICALS 1x10 = 10M

1. Problem on application of HWL in case of multiple allelic locus (or) X-linked locus
2. Problem on estimation of Snyder's Ratios
3. Problem on testing for deviation from Hardy Weinberg Equilibrium using Chi square test
4. Problem on selection against recessives (or) selection in favour of heterozygotes (or) selection against heterozygotes
5. Problem on estimation of Inbreeding coefficient from pedigrees:
   a) Back cross (one/two generations), full sib mating (one/two generations)
   b) Half sib mating (one/two generations), uncle- niece/aunt-nephew
   c) First cousin mating, first cousins once removed,
   d) Second cousin mating, double first cousin mating etc.

II. MINOR PRACTICALS 1x5 = 5M

1. Problem on calculation of gene and genotype frequencies under HWE –Single autosomal locus with 2 alleles
2. Problem on estimation of Mutation rates - dominant (or) recessive deleterious alleles
3. Problem on mutation-selection equilibrium
4. Problem on calculation of Inbreeding coefficient –smaller pedigree such as
   a) One generation of back-cross
   b) One generation of full-sib mating
   c) One generation of half-sib mating
5. Problem on calculation of genotype frequencies under Inbreeding (given 'F' value and allele frequencies 'p' and 'q')

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III. SPOTTERS / EXHIBITS **5x1 = 5M**

1. Deme (Figure)
2. Graph on relationship between gene and genotype frequencies under HWE
3. Graph on attainment of equilibrium for an X-linked locus
4. Snyder's Ratios (Give formulae and ask to comment on the spotter)
5. Mutation-selection equilibrium (give formulae $u=sq^2$ and $u=sp$ and ask to comment on the spotter)
6. Selection in favour of recessives (figure of industrial melanism in Peppered moth)
7. Selection in favour of heterozygotes (world map showing heterozygote advantage in malarial regions)
8. Selection against heterozygotes (figure of maternal-fetal Rh incompatibility)
9. Illustration (or) figure of Bottle neck effect
10. Illustration (or) figure of Founder effect
11. Raw and forked pedigree diagrams
12. Genetic Load (seggregational load either as formula or figure)
13. Phylogenetic tree (figure)
14. Quantitative trait (bell shaped distribution with mean)

IV. RECORD & VIVA **5M**

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B.Sc GENETICS III YEAR
SEMESTER-VI
DISCIPLINE SPECIFIC ELECTIVE (DSE- 3F)
DSE-3F (A)

BS608: HUMAN GENOME & HUMAN GENETICS

QUESTION BANK FOR PRACTICALS

Duration= 2 hours **Total= 25M**

I. MAJOR PRACTICALS 1x10=10M

1. Unbanded (Giemsa stained) karyotype –normal (or) trisomy/monosomy etc. (aneuploidy)
2. G banded karyotype –normal (or) trisomy/monosomy etc (aneuploidy)
3. Identification of Haemoglobin variants by electrophoresis
4. Screening for Barr bodies in buccal epithelial cells
5. New born screening for PKU

II. MINOR PRACTICALS 1x5 = 5M

1. Identification of mode of inheritance of a trait from pedigree: Autosomal recessive (or) Autosomal dominant, giving reasons

2. Identification of mode of inheritance of a trait from pedigree: X-linked recessive (or) X-linked dominant, giving reason

3. Problem on diagnosis of single gene disorder (autosomal) by providing the Southern Blot of a multigenerational family

4. Problem on diagnosis of single gene disorder (X-linked) by providing the Southern Blot of a multigenerational family

5. Problem on prediction of Down's syndrome in progeny in case of a parent having isochromosome of 21 (or) translocation between chromosomes 14/21 etc.

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III. SPOTTERS / EXHIBITS 5x1 = 5M

1. Human genome project
2. Inborn errors of metabolism
3. Single gene disorders: Autosomal recessive (either pedigree/figure)
5. Single gene disorders: Autosomal dominant (either pedigree/figure)
6. Single gene disorders: X-linked recessive (either pedigree/figure)
7. Single gene disorders: X-linked dominant (either pedigree/figure)
8. Multifactorial inheritance: Diabetes/Hypertension
9. Prenatal diagnosis- Amniocentesis/ Chorionic Villus Sampling
10. Prenatal diagnosis-Ultrasound Scanning
11. Gene therapy-Ex Vivo
12. Gene therapy-In Vivo
13. Identification of Barr body in buccal epithelial cells (figure)
14. Guthrie test for new born screening of PKU (figure)
15. Sickle-cell anaemia (figure of blood smear)

IV. RECORD & VIVA 5M

Dr. H. Surekha Rani
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B.Sc GENETICS III YEAR

SEMESTER- VI
DISCIPLINE SPECIFIC ELECTIVE (DSE-3F)
DSE- 3F(B)

BS608B –CELLULAR & MOLECULAR IMMUNOLOGY

QUESTION BANK FOR PRACTICALS

Duration= 2 hours **Total= 25M**

I. MAJOR PRACTICALS — 1x10=10M

1. Single Radial Immunodiffusion
2. ELISA
3. Coombs Test
4. Western Blot

II. MINOR PRACTICALS — 1x5 = 5M

1. Differential Count of Lymphocytes
2. Agglutination
3. Haemagglutination Test

III. SPOTTERS / EXHIBITS — 5x1 = 5M

1. Antigen-Antibody Interaction
2. Immunoglobulin structure
3. Cells of Immune System
4. Organs of Immune System
5. Immunoelectrophoresis
6. Flow Cytometry
7. Monoclonal Antibodies
8. Polyclonal Antibodies
9. Auto Immune Diseases- Thyroid/Rheumatoid Arthritis
10. Hypersensitivity - Types

IV. RECORD & VIVA — 5M

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FACULTY OF SCIENCE
B.SC VI SEMESTER PRACTICAL EXAMIATION
SUBJECT: GEOLOGY
ELECTIVE –II **MINERAL EXPLORATION**
PAPER VIII
QUESTION BANK

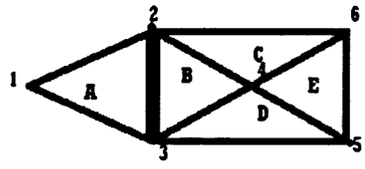
TIME: 3 HOURS **Max Marks: 25**

QUESTION NO: 1 **4 Marks**

1. Write the procedure for identifying representative sample by using coning and quartering techniques.

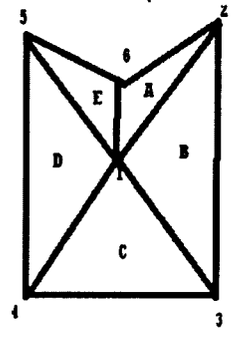
QUESTION NO.2 **1x 4 = 4Marks**

A. Sample for an ore body of iron was carried out as shown in the figure. calculate the assay vale of the deposit and tonnage of the deposit at the given depth 28m and specific gravity is 4



SAMPLE NO	1	2	3	4	5	6
ASSAY VALUE	2.5	2.8	2.3	2.2	2.6	3.1
AREA OF TRIANGLE(Sq.m)	A=3500	B= 2600	C= 3200	D= 4000	E= 2000	TOTAL = 15,3000

B. Sample for an ore body of iron was carried out as shown in the plan below. calculate the assay vale of the deposit and tonnage of the deposit at the given depth 30m and specific gravity is 5.6



SAMPLE NO	1	2	3	4	5	6
ASSAY VALUE	3.5	4.2	5.2	3.6	4.2	3.6
AREA OF TRIANGLE(Sq.m)	A=250	B= 600	C= 700	D= 600	E= 500	TOTAL = 2650

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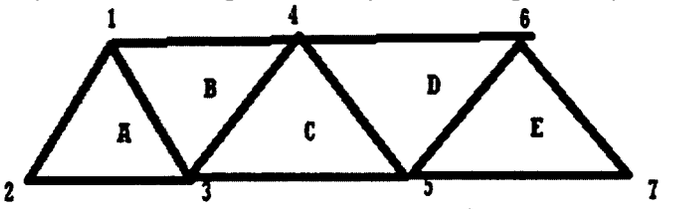
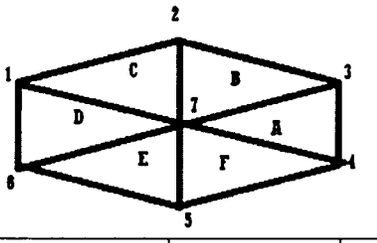
C. Sample for an ore body of iron was carried out as shown in the figure. calculate the assay vale of the deposit and tonnage of the deposit at the given depth 30m and specific gravity is 4.5



SAMPLE NO	1	2	3	4	5	6	7
ASSAY VALUE	30	25	30	40	50	40	20
AREA OF TRIANGLE(Sq.m)	A=600	B= 650	C= 700	D= 800	E= 600	-	TOTAL = 3350

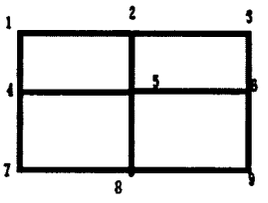
D. Sample for an ore body of iron was carried out as shown in the plan below. calculate the assay vale of the deposit and tonnage of the deposit at the given depth 20m and specific gravity is 2.98



SAMPLE NO	1	2	3	4	5	6	7
ASSAY VALUE	3.5	4.5	5.6	5.8	4.9	3.9	3.6
AREA OF TRIANGLE(Sq.m)	A=2300	B= 3200	C= 4200	D= 6100	E= 6200	6400	TOTAL= 27600

QUESTION NO: 3 **1x 4 = 4Marks**

A. Sampling has carried out for laterite deposit in a grod pattern as shown in plan below. Calculate average assay tonnage, average depth, volume and total reserves, specific gravity is 4.5 by external method between sample 100 m



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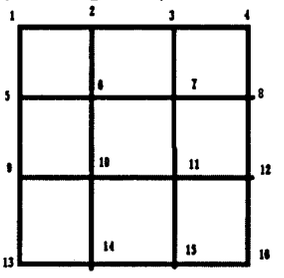
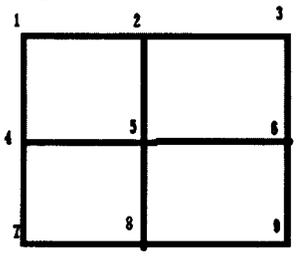
SAMPLE NO	1	2	3	4	5	6	7	8	9
ASSAY VALUE	45	50	56	60	65	70	65	60	56
DEPTH (m)	20	30	20	35	40	50	40	20	25

B . In a given plan sample have been drilled each 300m intersection of rectangular co-ordinate system there are 16 drill hooked points 1-16 and each drilled length on depth of sample meters and it assay value in sq.m The areas not bounded by any property essay or other boundaries which limits extend of deposits specific gravity 5.6 . Find average assay, depth, Tonnage, volume, total ore reserves.



Sample No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Avg.Assay	20	18	40	15	22	35	30	12	20	40	20	14	35	15	10	20
Depth (m)	20	16	15	12	18	10	13	9	14	12	11	10	10	8	5	12

c. Sampling has been carried out for regular intervals of 200m as show plan calculate from give data average assay and depth. Tonnage total ore reserves/volume its specific gravity is 6.



Sample No	1	2	3	4	5	6	7	8	9
Avg.Assay	1.2	1.5	1.6	0.9	0.1	0.5	0.8	8.1	1.3
Depth (m)	25	30	40	50	40	30	35	35	25

D.Sampling has been carried out for regular intervals of 200m as show plan calculate from give data average assay and depth. Tonnage total ore reserves/volume its specific gravity is 6.

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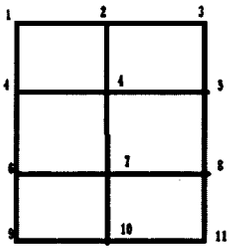

Sample No	1	2	3	4	5	6	7	8	9	10	11	12
Avg.Assay	1.2	1.5	1.6	0.9	0.9	0.5	0.8	1.1	1.2	1.3	0.9	1.2
Depth (m)	25	30	40	50	40	30	35	45	35	25	20	15

QUESTION NO.4 **1x 4 = 4Marks**

A. Calculate Average assay and average width of the copper ore from the given data below

Sample no.	14	2	3	4	5	6
Distance from the first sample	0	45	130	165	205	220
width	2.5	3.6	4.8	5.7	7.0	6.5
Assay	2.46	2.19	2.20	3.20	4.10	3.26

B. Calculate Average assay and average width of the Lead ore from the given data below

Sample no.	14	2	3	4	5	6
Distance from the first sample	0	45	48	55	62	72
width	6.10	35.52	4.25	7.12	71.26	6.45
Assay	2.0	1.25	2.01	1.79	1.86	1.23

C. Calculate Average assay and average width of the Manganese ore from the given data below

Sample no.	14	2	3	4	5	6
Distance from the first sample	0	25	35	85	108	125
width	3.2	1.9	2.1	3.6	4.5	5.0
Assay	36	39	52	62	58	65

D. Calculate Average assay and average width of the tungsten e ore from the given data below

Sample no.	14	2	3	4	5	6
Distance from the first sample	0	80	172	200	205	215
width	4.2	6.8	3.8	4.6	5.4	4.9
Assay	2.55	2.19	2.25	2.35	2.90	3.20

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E. Calculate Average assay and average width of the Copper body ore from the given data below

Sample no.	14	2	3	4	5	6
Distance from the first sample	0	27	37	87	93	114
width	3.2	3.5	6.9	5.3	6.2	4.1
Assay	30	22	28	29	31	35

QUESTION NO. 5 **1x 4 = 4Marks**

A. Calculate the ratio of concentration and percentage of recovery from the following data

Product	Assay Value
Feed	14.5
Concnentrate	90
Talling	25

B. Calculate the ratio of concentration and percentage of recovery from the following data

Product	Assay Value
Feed	12.5
Concnentrate	95.0
Talling	2.5

C. Calculate the ratio of concentration and percentage of recovery from the following data

Product	Assay Value
Feed	22
Concnentrate	78
Talling	8

D. Calculate the ratio of concentration and percentage of recovery from the following data

Product	Assay Value
Feed	25
Concnentrate	75
Talling	6

E. Calculate the ratio of concentration and percentage of recovery from the following data

Product	Assay Value
Feed	15
Concnentrate	75
Talling	3

RECORDS **5 Marks**

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FACULTY OF SCIENCE
B.SC VI SEMESTER PRACTICAL EXAMIATION
SUBJECT: GEOLOGY
ELECTIVE –II. **MINING GEOLOGY AND MINERAL BENEFICIATION**
PAPER VIII
QUESTION BANK

TIME: 3 HOURS **Max Marks: 25**

Q. No. I.
Write the diagnostic features of the following coal samples and explain?
a. coal b. bitumen c, peat d. Anthracite **2 x 2 1/2 M= 5M**

Q. No. II. **1x5M = 5M**
A. The vertical thickness of the rock formation dipping 30 ° towards east is 200'. Determine the width of the outcrop, assuming that the region is of no relief.

B. Determine the thickness of a shale that strikes N-S with a dip of 25 ° E . The width of the outcrop measured in E-W direction is 750'. The region is of no relief.

C. Bore holes were dug at ABCD, which are situated at N-W, N-E, S-E and S-W corner of a square corner. The sides of which are 5000'. A coal seam is reached in the boreholes at the following depths 100' at A, 400' in B and 600' at D. At what depth will the coal seam be in C.

D. Bore holes were sunk at A,B and C which are at the corners of a equilateral triangle whose sides are 6000' long with C being West of B and A North of the point midway between B and C. A coal seam was met at the depth of 600' at A, 400' at B and 200' at C.Draw the plan of the country and find the dip of the coal seam.

Q. No. III. **1x5M = 5M**

A. Three coal pits A, B and C at the corners of the equilateral triangles on a horizontal plane surface of the ground enter a coal seam at depths of 100', 200' and 400' respectively, below the surface. Two sides of the triangle is 500'in length and C is due S of A. Find the direction and amount of dip of the upper surface of the coal seam, supposing this to be a plane surface.

B. Boreholes were sunk at A, B and C which are at the same altitude above sea level .B is 8000' due east of A and C is 400' due sourht of a point between A & B. A coal seam was reached in the bore holes at the following depth . A 250 ', B at 850' and C at 700'. Find the direction and amount of dip of the coal seam.

C. A bed strikes N70 ^{0} W showing a dip of S80 ^{0} W on a vertical plane, trends N 55^0 W. Find the true dip.

D. On a vertical bed trending N60^0 E the apparent dip of the bed is 26^0 NE. On a second bed trending S60 ^{0}W and dips 19 ^{0} SW. Find the strike and true dip of the bed.

E. On a vertical bed trending N60^0 E the apparent dip of the bed is 26^0 NE. On a second bed trending S10 ^{0}W and dips 19 ^{0} SW. Find the strike and true dip of the bed.

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Q. No. IV. **1x5M =5M**

Describe the granulometric analysis of the given soil sample data and interprets it depositional environments.

Sample 1

Sieve No	40	50	60	70	80	100	120	140	pan
Wt in grams	0.25	1.82	5.384	10.03	31.46	31.51	5.48	6.50	6.80

Sample 2

Sieve No	30	44	60	100	120	150	170	200	240	300	pan
Wt in grams	0	0.0037	0.0680	6.9909	2.6566	14.4858	11.9302	6.0957	6.8084	0.5543	0.4162

Sample 3

Sieve No	18	20	30	40	50	60	70	80	100	120	140	Pan
Wt in grams	0.3242	.3372	2.2222	8.5294	20.5062	13.0336	5.9048	5.1024	3.5888	0.8370	0.5484	0.366(

Sample 4

Sieve No	4	5	6	8	12	18	20	30	40	50	60	70	80	100	120	140	pan
Wt in grams	0.1724	0.2844	0.1636	0.2456	2.1470	5.1874	2.6982	6.1616	7.6588	4.522	2.3484	3.8008	3.4106	0.6976	0.6978	0.6464	0.6922

V. Record **5M**

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B.Sc. VI – Semester (Practical) Examination
Subject: Geology
Paper- VII -Economic Geology
Question Bank

Time: 2 Hours Max **Marks: 25**

I. Identify the Megascopic ore minerals (from 1-12) and mode of occurrence, distribution in India and uses of the minerals? **(12×1 = 12 Marks)**

1.Hematite, 2.Magnetite, 3.Pyrite, 4.Pyrolusite, 5.Psilomelane,6.Chalcopyrite, 7.Malachite,8.Azurite,9.Bauxite, 10.Chromite, 11.Galena, 12.Sphalerite, 13.Magnesite, 14.Gypsum, 15.Asbestos, 16.Steatite, 17.Graphite, 18.Monozite, 19.Illemnite, 20.Zircon, 21.Fluorite, 22.Baryte, 23.Corundum, 24.Topaz, 25.Calcite, 26.Kaolinite, 27.Kyanite, 28.Sillimanite, 29.Garnet, 30.Mica.

II. Study the Megascopic ore minerals (from 13-16) and identify the structures of the ore minerals? **(4×2= 8 Marks)**

1.Hematite, 2.Magnetite, 3.Pyrolusite, 4.Psilomelane, 5.Chalcopyrite, 6.Bauxite, 7.Galena, 8.Magnesite, 9.Gypsum, 10.Asbestos, 11.Baryte, 12.Calcite, 13.Kyanite, 14.Sillimanite, 15.Garnet, 16.Mica.

III. Record **(1×5= 5Marks)**

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B.Sc. ZOOLOGY

SEMESTER - V
Paper – VII, DSC – II
Immunology and Animal Biotechnology
Practical Question Paper

Max. Marks: 25
2hrs

I. Identification, labeled diagram and salient features of spots **3x2 = 06**

1. A) Spleen B) Thymus C) Lymph nodes
2. A) SLE B) Rheumatoid arthritis C) Chronic thyroiditis (CT)
3. A) Plasmids B) Cosmids C) Transgenic animlas

II. Identification/Determination from Immunology **6 Marks**

1) Identification of your own blood group (slide method)
2) Enumeration of RBC/TEC from a given blood sample
3) Enumeration of WBC/WBC count from a given blood sample
4) Enumeration of differential count of WBC from a given blood sample

III. Identification/study the technique from Animal Biotechnology **6 Marks**
(through photographs)

A) Southern blotting B) Western blotting
C) DNA sequencing D) DNA finger printing

IV. Project work----------**2 Marks**

V. Record work----------**3 Marks**

VI. Viva----------**2 Marks**

B.Sc. ZOOLOGY

SEMESTER - VI
Paper – VIII, DSC – II(A)
Aquatic Biology
Practical Question Paper

Max. Marks: 25
2hrs

I. Topography of a Lake/physic chemical analysis of water — **8 Marks**
   A) Estimation of dissolved oxygen (DO)
   B) Estimation of Co_2 is given water
   C) Estimation of BOD
   D) Estimation of COD
   E) Estimation of Carbonates
   F) Estimation of Bicarbonates

II. Biological study of given water sample/lake water — **8 Marks**
   A) Identification of Zooplankton's
   B) Population density of zooplankton's in water sample

III. Project work/Report — **3 Marks**
   A) Study of topography of a nearby lake
   B) Project report on sewage treatment plant
   C) Project report on fisheries institute

IV. Practical record — **3 Marks**

V. Viva — **3 Marks**

B.Sc. ZOOLOGY

B.Sc. III Year
SEMESTER - VI
Paper – VIII, DSE – II(B)
Public Health and Hygiene
Practical Question Paper

Max. Marks: 25
2hrs

I. (a) Determine the BMI of the individual? **7 Marks**
(b) Find out the blood pressure of the individual and analyze it
(c)Find out the percentage of the haemoglobin (Sahlis acid method)?
(d) Identification of the carbohydrates in the given sample/Urine (Benodicts method)

II. (a) Estimate the fat content in the milk sample? **7 Marks**
(b) Identify the parasitic stages through permanent slides and comment
(i) Malaria or (ii) Phylaria

III. Submit a project report on **5 Marks**
(a) Epidemiological survey
(b) Sanitation survey of a locality
(c) Visit to water purification an treatment plant
(d) Visit to industrial plant to study occupational health hazards
(e) Agriculture field visit to study the health hazards of farmers and agricultural labourers

IV. Practical record **3 Marks**

V. Viva **3 Marks**

B.Sc. ZOOLOGY

B.Sc. III Year
SEMESTER - VI
Paper – VIII, DSC – (C)
Poultry Science
Practical Question Paper

Max. Marks: 25
2hrs

I. (A) Estimation of Amino acids in given feed sample — **7 Marks**
(B) Estimation of proteins in given feed sample
(C)Estimation of fatty acids in given feed sample

II. (A) Estimation of Albuman and yolk quantity in given egg — **7 Marks**
(B)Estimation of calcium in egg shell
(C)Estimation of cholesterol or carotenes or peroxides in meat of chicken

III. Project report to be submitted on — **5 Marks**
(A) Endocrine glands and their influence on growth of poultry
(B) Common diseases of poultry
(C) Visit to poultry farm and a report on management and maintenance

IV. Practical record — **3 Marks**

V. Viva — **3 Marks**