3-575-4-2024

GUJARAT UNIVERSITY

B. Sc.

Semester-VI

Microbiology Practical Examinations

April-2024

(Common question paper for all batches)

Total Question Slips = 3

First Day

Slip No. 1

Ex.1 Isolation and identification of Gram-negative bacteria. **30**

Ex.2 Fermentation technology/Virology/Mycology (any one of the following) **30**

- **A.** Isolation of bacteriophage from sewage.
- **B.** Fermentative production of amylase and its activity check.
- **C.** Bioassay of penicillin using *Bacillus subtilis.*
- **D.** Sterility testing of pharmaceutical product
- **E.** Isolation and cultivation of yeast

Ex.6 Journal and slides. **10**

------XXXXX------

GUJARAT UNIVERSITY

B. Sc.

Semester-VI

Microbiology Practical Examinations

April-2024

(Common question paper for all batches)

Second Day

Slip No. 2

30

Ex.3 **General exercise** (any one of the following)

- **A.** Separation of amino acids by paper chromatography
- **B.** Separation of amino acids by thin layer chromatography
- **C.** Estimation of glucose by GOD-POD method
- **D.** Estimation of Blood Urea by DAM method
- **E.** Physical and chemical analysis of urine
- **F.** Determination of antibiogram

Ex.1 Continuation of first day work.

Ex.2 Continuation of first day work &/or final submission of results.

------XXXXX------

GUJARAT UNIVERSITY

B. Sc.

Semester-VI

Microbiology Practical Examinations

April-2024

(Common question paper for all batches)

Third Day

Slip No. 3

Ex.4	**Spotting** 1. Identify the organism and name the disease caused by it. 2. Identify the organism and give its economic importance 3. Identify the vector; give its scientific name and the disease transmitted. 4. Identify the plant pathogenic specimen and name the causative organism. 5. Identify the medium and the growth of the organism. 6. Give the laboratory use(s) of the labeled chemical/stain/reagent. 7. Identify the instrument and give its use in Microbiology laboratory. 8. Identify the biochemical reaction and give its mechanism/principle. 9. Give important contribution of the labeled scientist. 10. Do as directed.	**20**
Ex.5 (A)	**Viva voce**	**10**
Ex.5 (B)	**Viva voce**	**10**
Ex.1	Continuation of first / second day work and final submission of results.	
Ex.2	Continuation of first/second day work and final submission of results, (if any).	
Ex.3	Continuation of first/second day work and final submission of results, (if any).	

------XXXXX------

SEMESTER - VI
COURSE MI-309
Medical Microbiology

Unit I Relationship between human body and microbe

1. Normal microbiota (normal flora) of the human body (4 hr)
   A. Importance, origin and establishment
   B. Microbiota of various body parts
   C. Gnotobiotic life and gnotobiosis
2. Host-parasite relationship (6 hr)
   A. Concept of host-parasite relationship and factors affecting it
   B. Microbial pathogenicity:
   C. Overview of bacterial and viral pathogenicity
   D. Factors affecting the process of infection
   E. Pathogenicity: (a) Invasiveness: role of structures and secretions of bacteria
      (b) Toxigenicity: Protein and LPS toxins -properties and mode of action

Unit II Epidemiology of infectious disease and vaccines

1. Epidemiology (6 hr)
   A. Concepts of epidemiology
   B. Epidemiological types of infection
   C. Techniques used to study epidemiology
   D. Epidemiological markers
   E. Infectious disease cycle
   F. Nosocomial infections: sources, transmission and control
2. Vaccines (4 hr)
   A. Concept immunoprophylaxis
   B. Types of vaccine
   C. Schedule of vaccination (followed in India)
   D. Hazards of vaccination

Unit III Clinical Microbiology

1. Specimen: types of specimen, methods of collection, storage and transportation (2 hr)
2. Methods used for diagnosis and identification of pathogens (8 hr)
   A. Microscopy
   B. Growth and biochemical characteristics
   C. Clinical immunology
   D. Pathological changes in blood and body fluids and tissues
   E. Significance of computer and possible uses of biosensors

Unit IV Infectious diseases of human being

Study of following diseases with respect to etiological agent, symptoms, transmission, diagnosis and control.

1. Airborne diseases: Tuberculosis, Swine flu (2 hr)
2. Food and waterborne diseases: Typhoid, Hepatitis A (2 hr)
3. Contagious diseases: Syphilis, AIDS (2 hr)
4. Insect borne diseases: Malaria, Dengue (2 hr)
5. Zoonoses: Rabies, Anthrax (2 hr)

Reference Books:

1. **Principles of Microbiology,** R. M. Atlas, 2nd Edition (Indian Edition) (2015), McGraw Hill Education (India) Private Limited –New Delhi
2. **Prescott, Harley, and Klein's Microbiology,** J. M. Willey, L. M. Sherwood, C. J. Woolverton, 7th Edition (2008), McGraw Hill Higher Education- USA
3. **Baker and Silverton's Introduction to Medical Laboratory Technology,** Baker F J, Silverton R E, Pallister C J, (1998), 7th edition, Butterworths-Heinemann, Oxford, UK

GOVT. SCIENCE COLLEGE GANDHINAGAR

HEAD
MICROBIOLOGY DEPT.
Govt. Science College
Gandhinagar-382015

A

DISSERTATION REPORT

ON

WATER ANALYSIS

SUBMITTED TO ,

GUJARAT UNIVERSITY

For the degree of

Master Of Science

ORGANIC CHEMISTRY

BY

MANSURI KAREENA IKRAJ AHMAD.

EXAM NUMBER - 1525(M.SC SEM 4)

ENROLLMENT NUMBER – 202002300437

Government science college , Gandhinagar

Under the supervision of

Dr. S.P.Prajapati

April 2022

GOVERNMENT SCIENCE COLLEGE GANDHINAGAR

A

DISSERTATION REPORT (CHE -510)

ON

WATER ANALYSIS

SUBMITTED TO ,

GUJARAT UNIVERSITY

For the degree of

Master Of Science

IN

ORGANIC CHEMISTRY

BY

Name – MASURI KAREENA IKRAJ AHMAD.

Exam number - 1525. (M.SC SEM 4)

ENROLLMENT NUMBER – 202002300437

Government science college , Gandhinagar

Under the supervision of

Dr. S.P.Prajapati

April 2022

DECLARATION

I hereby declare that the dissertation was completed at government science college Gandhinagar from 21 March to 31March (10 days) under supervision and guidance of Dr.S.Prajapati (professor of chemistry at government science college) .

I also hereby declare that this dissertation report is originally written by me and submitted to university for the part of the fulfillment of the award of master of science

Signature: K.I. Mansuri

Date - 9-4-2022

Place – Gandhinagar

Name – MANSURI KAREENA I.

Exam number- 1525

M.SC Sem 4 , GIA - 15

Enrollment no - 202002300437

सत्यमेव जयते

GOVERNMENT SCIENCE COLLEGE
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NAAC Accredited-B+
(CGPA-2.69)

Date: 13-4-2022

CERTIFICATE

This is to certify that the Dissertation Report is a bonafide record of the independent written by Miss. Mansuri Kareena I (Exam No.:1525 M.Sc.-IV) under my supervision and submitted to the Gujarat University in partial fulfillment for the award of the degree of Master of Science (M.Sc.) The Dissertation Report is originally written by the student

K. I. Mansuri
Student's Signature
(Mansuri Kareena I)

Supervisor/Mentor's
(Dr.S.P Prajapati)
Forwarded by:

Head, Department of Chemistry
Government Science Colleg
Gandhinagar

Chemistry Department
Government Science College,
Gandhinagar

To,
Controller of Examination,
M.Sc. Sem-IV (Organic Chemistry,
Gujarat University,
Navrangpura, Ahmedabad-380009

INTRODUCTION

(૧) Physico chemical analysis of drinking water of some villages of Gujarat state has been investigated intensively ,bore well water is generally used for drinking water and other domestic purposes in this area , the use of fertilizers and pesticides ,manures ,lime ,septic tank ,refuse dump etc ,are the main sources of bore well water pollution ,in the absence of the fresh water supply people residing in this are use bore wells water for their domestic and drinking , consumption , in order to assess water quality index ,we have reported the physico-chemical analysis of bore wells drinking water.

Accrording to water and river commission western austrellia ground water occupies the pores and crevices in sand , sand stone and other rocks .the crucial role which ground water plays as decentralized sources of drinking water for millions of rural and urban families cannot be overstated .Rao et al.reported that about 80% of diseases in the world are created because of poor quality of drinking water ,the quality of the ground water cannot be restored by stopping the pollution if it is contaminated once .water quality index is very important tool for the information on water quality ,some important rating are given below .

➢ Result And Discussion

The physico – chemical data of the water sample collected in march 2022 are recorded in the tables ,the results of the samples vary with different collecting places because of the different nature of the soil contamination.

Temperature – in the present study temp ranged from 30°C to 35 °C

pH – in the present study pH ranged from 6.3 to 6.9 , The tolerance pH limit is 6.5 – 8.5.

TDS – in the present study TDS ranged from 800 to 1050 mg/L .according to WHO and Indian standards, TDS value should be less than 500mg/L for drinking water.

Calcium hardness – the calcium hardness ranged from 8.02 to 88.70 mg/L .the tolerance range for calcium hardness is 75 – 200 mg/L.

Magnesium hardness – the magnesium hardness ranged from 7.88 to 155.42 mg/L .the tolerance range for Mg hardness is 50 – 100 mg/L.

D.O – the D.O ranged from 4.4 to 8.4 mg/L in present samples ,the minimum tolerance range is 4.0 mg/L for drinking water.

Chlorides – in the present study chloride ranged from 26.98 to 569.42 mg/L while the tolerance range is 500 – 1000 mg/L.

Analysis of sample collected in March ,2022

Village	Temp	pH	EC	TDS	CaH	MgH	DO	COD	Cl^-
1. Sabaspur	22	6.89	2.2	960	55.23	29.36	0.024	19.84	179.6
2. Arsodiya	25	6.62	2.3	840	45.2	20.2	0.008	19.04	94.50
3. Lapakaman	26	6.55	1.9	920	48.14	81.36	0.040	17.92	202.9
4. Manpur	17	6.44	1.1	1040	63.14	123.65	0.032	20.16	98.80
5. Rajpur	15	6.41	1.3	1000	58.2	109.4	0.016	20.48	105.4
WHO Standard	-	6.5 – 8.5	1.400	1000	100	150	>5	10	250

REFERENCES

(1) Gujarat infrastructure development board (GIDB) review of review of blue print for infrastructure in Gujarat 9 (Big 2020) – final report volume - 1

(2)S.S.Yadav advance applied science research (2011)2(2),197

(3)" total dissolved solids(TDS) : EPA methods Washington D,C : U.S environmental protection agency (EPA) (1999) 11 – 16

(4)National academy of science , drinking water and health, federal register , 1977 , 43 (132)

(5)WHO , the guideline for drinking water quality recommendations ,world health organization ,Geneva , 2002.

(6)K.Navneet , D.K Sinha ,international journal of environmental sciences (2010) 1 (2) – 253

(7)Indian standard specifications for ingestion , IS :10500, 1983

(8)Water quality – sampling – guidance of the design of sampling AS/NZS 5667.1:1998

(9)Susheela A K ,Curr,sci.1999.77(10), 1250-1251

(10)Indian Standard Specification For Ingestion Water ,1998

ATC/BPA/13-14/P-6283

સરકારી વિજ્ઞાન કોલેજ

સેક્ટર-૧૫, ગાંધીનગર

નિરીક્ષકની સહી : 24/4/23

તારીખ :

પ્રાયોગિક ઉત્તરવહી

પરીક્ષા : Bsc sem-IV વર્ગ : રોલ નંબર : 205

વિષય : MATHS - 204 પ્રેક્ટિકલ નં. : તારીખ : 28/02/23

પુરવણી ક્રમાંક : 1+1 = 2

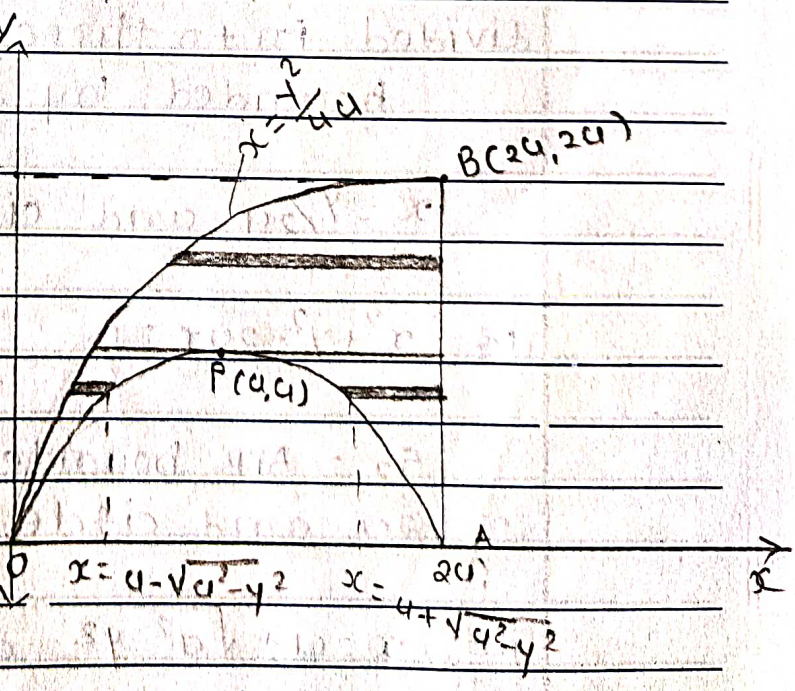
પ્રશ્ન નં.	૧	૨	૩	૪	૫	૬	૭	૮	કુલ ગુણ	પરીક્ષકની સહી
ગુણ										18/30

Q-1

a) change the order of integration $\int_0^{2a} \int_{\sqrt{2ax-x^2}}^{\sqrt{2ax}} f(x,y)\,dy\,dx$.

The limit of integrations are given by lines $x=0$, $x=2a$ Parabola $y=\sqrt{2ax}$ and circle $y=\sqrt{2ax-x^2}$

$x^2+y^2-2ax=0$ circle integrations in Point x-axis $A(2a,0)$.



The line $x=2a$ integrations of Parabola in Point $B(2a,2a)$. Let $P(a,a)$ be the mid Point of arc OPA of the circle.

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Department of Mathematics,
BSC Sem 5, Dec 2020, MAT-301, Linear Algebra-II

Roll no.	NAME	out of 15	Assig. (10)	Attandence(5)	MAT-301 Total(30)
241	BAMBHANIYA ROHIT	12	10	5	27
243	Bhut Rakesh Dhirubhai	10	10	4	24
244	Chaudhary devang haribhai	14	10	5	29
245	Chaudhary Nareshkumar Ishwarbhai	11	10	5	26
247	CHAUDHARY VAIBHAVKUMAR RAMESHBHAI	15	10	5	30
248	Chaudhary zalakbhai rajubhai	12	10	5	27
249	Chauhan Jaysinh Narendrasinh	14	10	5	29
250	Chavda Divyarajsinh Chetansinh	13	10	5	28
251	Chavda Rakesh Premjibhai	13	10	5	28
252	Vishal kanabhai chavda	9	10	4	23
253	Dabhi Nirajkumar Maganlal	14	10	5	29
254	Damor Ravi balvantbhai	12	10	5	27
255	Dervaliya Dilip khimabhai	10	10	4	24
256	Desai krunal vishnubhai	14	10	5	29
257	Desai parthkumar bharatbhai	13	10	5	28
258	Dhanani Abhay Nareshbhai	12	10	5	27
259	Domadiya Helly kamleshbhai	9	10	4	23
260	Goriya Dhaval Meramanbhai	10	10	4	24
261	Goswami Nirmalkumar Jagadishpuri	12	10	5	27
263	KAG DASARTHABHAI MAGNAJI	10	10	4	24
264	Kandoriya yogesh nagabhai	9	10	4	23
265	KARAN RATHOD	9	10	4	23
266	KATARA BHADRESHKUMAR KISHMATBHAI	12	10	5	27
267	Makwana Piyushkumar Kavabhai	10	10	4	24
268	NAINESH YOGENDRABHAI PANDYA	14	10	5	29
269	NAKUM DEEP DAYALJIBHAI	12	10	5	27
270	Dhairya Ghanshyambhai Parmar	13	10	5	28
271	Kesharisinh Pratapsinh Parmar	12	10	5	27
272	PATEL DAKSHAYKUMAR SHANABHAI	7	10	4	21
273	Patel jay a	12	10	5	27
274	PATEL URVISHKUMAR MAHESHBHAI	12	10	5	27
275	Rajani Shreyash Bhupatbhai	12	10	5	27
276	Rajput jayrajsinh keshaji	12	10	5	27
277	Nihar Vinodkumar Raval	13	10	5	28
278	Sarvottam Kamlesh Parekh	12	10	5	27
279	Shekh rajeshbhai shamajibhai	10	10	4	24
280	Shital kaduba Gudadhe	9	10	4	23
281	Solanki Krupalsinh	11	10	5	11
282	Solanki Piyushkumar Hasmukhbhai	12	10	5	27
283	Sutariya Jaydeepkumar Chimanbhai	11	10	5	26

Roll no.	NAME	out of 15	Assig. (10)	Attandence(5)	MAT-301 Total(30)
284	Suthar Jeel Mukeshbhai	12	10	5	27
285	THAKOR CHETANKUMAR KESHAJI	6	10	4	20
286	VAGHELA VISHWJITSINH NARENDRASINH	11	10	5	26
287	Zala digvijay sinh kadubhai	12	10	5	27
288	Zala Nikul Parvatsinh	9	10	4	23
289	Zala puransinh metubha	9	10	4	23
290	ZAMPADIYA NILESHBHAI RAMESHBHAI	10	10	4	24

અધ્યક્ષ
ગણિત શાસ્ત્ર વિભાગ
સરકારી વિજ્ઞાન કોલેજ
ગાંધીનગર.

Government Science College - Gandhinagar

Department of Microbiology, Continuous Comprehensive Evaluation (Internal)

B. Sc. SEM: VI Paper: MI: 307 Genetic Engineering Month: March Year: 2023

Sr. No	Roll No.	Name	Internal Test (15)	Assignment (10)	Attendence (Thoery) (05)	Total (30)
			A	B	C	A+B+C
1	281	AMAAN KHAN	11	6	5	22
2	282	BOGHANI JAGRUTI HARESHBHAI	10	10	5	25
3	283	CHAUDHARI CHETANKUMAR RAMESHBHAI	8	7	5	20
4	284	CHAUDHARY ANKITBHAI HEMRAJBHAI	8	5	5	18
5	285	CHAUDHARY JAYESHBHAI MAHADEVBHAI	9	6	5	20
6	286	CHAUDHARY VIDHYA MANDANBHAI	9	8	4	21
7	287	CHAVADA ARPITABEN ISHVARSINH	13	10	5	28
8	288	DARJI POOJABEN SANJAYKUMAR	15	10	5	30
9	289	DESAI ANITA MANUBHAI	10	8	5	23
10	290	DHOLAKIYA KEVAL DIPAKBHAI	9	6	3	18
11	291	FANEJA VIRALSINH KAMJIBHAI	9	5	5	19
12	292	GADHAVI HIRVA NILESHKUMAR	10	5	4	19
13	293	GOSWAMI JIYA BHANUGIRI	12	8	5	25
14	294	JADEJA DHRUVIKABA PRADHYUMANSINH	8	6	1	15
15	295	JOSHI BHARGAV AMRUTLAL	6	6	1	13
16	296	KAILA HEMALI MAHESH BHAI	10	10	5	25
17	297	MALANIYA AMITKUMAR MAHESHBHAI	12	4	5	21
18	298	MODI KHUSHIBEN HARESHBHAI	7	6	5	18
19	299	NASIT DHRUVILKUMAR PRAVINBHAI	6	4	5	15
20	300	ODEDARA SEJAL RAMABHAI	15	10	4	29
21	301	PANDAV KUNJKUMAR KIRITBHAI	7	6	5	18
22	302	PANDAV REENA PRAVINBHAI	11	7	5	23
23	303	PARMAR DEVDIP BHAVIKKUMAR	13	6	5	24
24	304	PARMAR JAY RAJANIKANT	9	5	5	19
25	305	PATEL DIYA ASHVINKUNAR	8	5	5	18
26	306	PATEL JAYMINKUMAR NARSINHBHAI	11	5	4	20
27	307	PATEL KHUSHIBEN JIGNESHKUMAR	14	10	5	29
28	308	PATEL MANSIBEN VINODKUMAR	12	10	5	27
29	309	PATEL PRIYABEN HARSHADKUMAR	12	10	5	27
30	310	PATEL RITUBEN SHANTILAL	10	10	5	25
31	311	PATEL SUCHI RAVINDRABHAI	12	6	5	23
32	312	PESHWA DEVANSHI SHAILESHKUMAR	11	7	5	23
33	313	PRAJAPATI NIKITABEN JITENDRAKUMAR	6	9	5	20
34	314	PRAJAPATI SAKSHIBEN ARVINDBHAI	8	9	5	22
35	315	RATHOD HETALBEN RAMABHAI	9	9	5	23
36	316	RAVAL RAVIKUMAR VIJAYAKUMAR	4	10	5	19
37	317	SANKALIYA DEVENDRA HASMUKHBHAI	12	10	4	26
38	318	THAKER JANVI PANKAJ	12	10	5	27
39	319	THAKOR SHITALBEN RAJUBHAI	12	10	5	27
40	320	THAKOR ARTIBEN RAJUBHAI	14	10	5	29
41	321	THAKOR BHAVANABEN KARAMSINH	11	9	5	25
42	322	TRIVEDI HARSHHWARDHAN HITENDRA	13	7	5	25
43	323	VAGH MAULIK JAGMAL BHAI	6	5	1	12
44	324	VAGHELA MOSAMI DHARMENDRABHAI	10	8	5	23
45	325	VAGHELA PRADIPSINH MAHIPATSINH	12	6	3	21
46	326	VALA DIMPAL BHAGVATSINH	9	10	5	24
47	327	PATEL DHRUVKUMAR PRAVINBHAI	Cancelled	Cancelled	Cancelled	Cancelled
48	328	PATEL SALONIBEN DINESHBHAI	9	9	5	23
49	329	PATEL VIYA HASMUKHBHAI	12	9	3	24
50	330	PATEL KUSH HASMUKHBHAI	6	4	3	13
51	331	PATEL ZEELBEN RASHMINBHAI	4	7	5	16
52	332	PANCHAL ZALAK S.	7	6	5	18

24/3/23

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DEPT. OF MICROBIOLOGY DEPT.
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Government Science College - Gandhinagar

Department of Microbiology, Continuous Comprehensive Evaluation (Internal)

B. Sc. SEM: VI Paper: MI: 308 Virology & Mycology Month: March Year: 2023

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6	286	CHAUDHARY VIDHYA MANDANBHAI	6	8	3	17
7	287	CHAVADA ARPITABEN ISHVARSINH	12	10	5	27
8	288	DARJI POOJABEN SANJAYKUMAR	13	10	5	28
9	289	DESAI ANITA MANUBHAI	9	9	3	21
10	290	DHOLAKIYA KEVAL DIPAKBHAI	8	9	3	20
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35	315	RATHOD HETALBEN RAMABHAI	14	9	3	26
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43	323	VAGH MAULIK JAGMAL BHAI	6	8	2	16
44	324	VAGHELA MOSAMI DHARMENDRABHAI	10	8	3	21
45	325	VAGHELA PRADIPSINH MAHIPATSINH	9	8	3	20
46	326	VALA DIMPAL BHAGVATSINH	9	9	4	22
47	327	PATEL DHRUVKUMAR PRAVINBHAI	ABSENT	ABSENT	ABSENT	ABSENT
48	328	PATEL SALONIBEN DINESHBHAI	8	9	4	21
49	329	PATEL VIYA HASMUKHBHAI	11	9	3	23
50	330	PATEL KUSHKUMAR MAHESHBHAI	3	8	2	13
51	331	PATEL ZEELBEN RASHMINKUMAR	3	9	4	16
52	332	PANCHAL ZALAK SURESHBHAI	6	9	4	19

Dr. SPP. Sathva

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MICROBIOLOGY DEPT.
Govt. Science College
Gandhinagar-382015

GUJARAT UNIVERSITY

Semester-4 Zoology

(SKELETON QUESTION PAPER FOR PRACTICAL EXAMINATION)

PAPER-206 (A)

(Based on Theory Paper 204)

Date: …….. Marks : 35 Time : ……

Q.1 Sketch, label and describe_____system of Cockroach. **06**

Q.2 Identify given figure of an arthropod vector and write brief description of its disease. **05**

Q.3 Identify & describe the given mouth parts. **04**

Q.4 Identify specimens 1 to 6 as per instructions: **12**

Sp.1 Identify and classify upto Class, giving reasons.
Sp.2 Identify and classify upto Class, giving reasons.
Sp.3 Identify and classify upto Class, giving reasons.
Sp.4 Identify and describe.
Sp.5 Identify and comment.
Sp.6 Identify and comment.

Q.5 Viva voce **04**

Q.6 Journal **04**

Shah

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Department of Zoology
Govt. Science College, Gandhinagar

GUJARAT UNIVERSITY
B. Sc. Sem- V BOTANY PRACTICAL EXAMINATION

BOT 306 : PRACTICAL I
Session I
(Algae, Fungi, Plant pathology,Bryophytes,)

Maximum marks – 35 Time: 5 hours Date : - - 20

Q.1 Identify, classify giving reasons and describe briefly. Draw the labelled diagrams of the peculiarities observed in Specimen A and B (12)

Q.2 Expose the reproductive structure from the Specimen C. Make a sketch and show your preparation to the Examiner. (07)

Q.3 Identify and describe briefly the Slides / Specimens.
(D)Algae,(E) Fungi,(F) Plant pathology and (G) Bryophytes (08)

Q.4 Journal. (02)

Q.5 Submission and Viva-voce (06)

GUJARAT UNIVERSITY
B. Sc. Sem- V BOTANY PRACTICAL EXAMINATION

BOT 306 : PRACTICAL I
Session II
(Systematic Botany, Angiosperms, Embryology and Anatomy)

Maximum marks – 35 Time: 5 hours Date : - - 20

Q.1 Refer the specimen A and B to their respective families giving reasons, floral formulas and floral diagrams (12)

Q.2 Make a Section of the given Plant Material C and show the distribution of mechanical tissue to the Examiner. (07)

Q.3 Identify and describe ,
(D) Embryology,(E) Anatomy,\ and (F) Anatomy (06)

Q.5 Journal, (02)

Q.6 Herbarium submission and viva, (08)

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GUJARAT UNIVERSITY
B. Sc. Sem- V BOTANY PRACTICAL EXAMINATION

BOT 306 : PRACTICAL II
Session I
(Plant Physiology, Biochemistry, Cell-biology, Genetics)

Maximum marks – 35 Time: 5 hours Date : - - 20

Q.1 Perform the physiological experiment assigned to you. Tabulate your observations and calculate.Show your experiments and records to the Examiner. (08)

Q.2 Solve the genetic problem as per the slip. (05)

Q.3 Prepare a slide showing cell division from the given specimen A. Stain if necessary & show the slide to the Examiner. Draw the labeled sketch. (06)

Q.4. Identify & Describe. (04)
(B) Chart from Cell-Biology (C) Chart from Biochemistry

Q.5 Journal (02)

Q.6 Tour report and Viva (10)

GUJARAT UNIVERSITY
B. Sc. Sem- V BOTANY PRACTICAL EXAMINATION

BOT 306 : PRACTICAL II
Session II
(Ecology, Plant Geography, Economic Botany, Biostatistics)

Maximum marks – 35 Time: 5 hours Date : - - 20

Q.1 To determine Abundance/Density of any five species occurring in a given area. Tabulate your observation and and result show your records to the Examiner. (Draw graphs if necessary) (10)

Q.2 Compare the Biological spectrum of the given area with the normal and predict the type of vegetation . (05)

Q.3 Solve the statistical problem as per the slip. (04)

Q.4 Identify & Describe: (06)
(A) Economic Botany. (B) Economic Botany. (C) Economic Botany.

Q.5 Journal (02)

Q.6 Viva and Submissions (08)

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GUJARAT UNIVERSITY
B. Sc. Sem- VI BOTANY PRACTICAL EXAMINATION

BOT 312 : PRACTICAL -I
Session I

(Pteridophytes, Pteridophyte fossils, Gymnosperms and Gymnosperm fossils)

Maximum marks – 35 Time: 5 hours Date : - - 20

Q.1 Identify,classify with giving reasons,describe briefly.Draw the labelled diagrams Of the peculiarities observed in specimen A,B and C. (12)

Q.2 Expose the reproductive structure from the Specimen D. Make a sketch and show your preparation to the Examiner. (06)

Q.3 Identify and describe briefly the Slides / Specimens. (08)
(E) Pteridophytes,(F) Gymnosperms ,(G) Pteridophyte fossils and (H) Gymnosperms fossils

Q.4 Journal. (02)

Q.5 Submission and Viva-voce (07)

GUJARAT UNIVERSITY
B. Sc. Sem- VI BOTANY PRACTICAL EXAMINATION

BOT 312 : PRACTICAL- I
Session II

(Angiosperms, Anatomy, Advanced Biochemistry and Microbiology)

Maximum marks – 35 Time: 5 hours Date : - - 20

Q.1 Refer the Specimens A and B to their respective families,Giving reasons Including floralformula and diagrams. (10)

Q.2. Prepare a double stained preparation of given material C.show your preparation (07)

Q.3 Identify and describe (06)
(D) Microbiology (E) Anatomy (F) Vitamins

Q.4 Journal. (02)

Q.5 Submission and Viva-voce (10)

for Head
Department of Botany
Govt. Science College
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GUJARAT UNIVERSITY
B. Sc. Sem- VI BOTANY PRACTICAL EXAMINATION

BOT 312 : PRACTICAL- II
Session I
(Plant Physiology, Plant Breeding, Molecular Biology, Biotechnology)

Maximum marks – 35 Time: 5 hours Date : - - 20

Q.1 Perform the physiological experiment assigned to you ,Tabulate your Observation and calculate,show your experiments and records to the examiner. (10)

Q.3 Identify and describe briefly the Slides / Specimens. (12)
(A) Physiology ,(B) Chart from Plant breeding ,(C) Chart from moleculer biology
(D) Chart from Biotechnology

Q.3 Journal. (03)

Q.4 Project Report and Viva-voce (10)

GUJARAT UNIVERSITY
B. Sc. Sem- VI BOTANY PRACTICAL EXAMINATION

BOT 312 : PRACTICAL- II
Session II
(Ecology, Gardening, Ethnobotany, Forestry)

Maximum marks – 35 Time: 5 hours Date : - - 20

Q.1 Estimate - Calcium / Carbonate and bicarbonate /Total hardness in terms of p.p.m in a water sample given to you. your observations and results (08)

and show them to the Examiner.

Q.2 Test the given soil sample for Carbonate/Nitrate deficiency (05)

Q.3 Identify and describe (10)
(A) Ethnobotany.
(B) Ethnobotany
(C) Wood sample
(D) Gardening chart
(E) Garden chart

Q.4 Journal. (02)

Q.5 Garden visit report & Viva. (10)

for Head
Department of Botany
Govt. Science College
Gandhinagar

GUJARAT UNIVERSITY

Third Year B. Sc.

Semester-VI

Microbiology Practical Examinations

April-2023

(Common question paper for all batches)

Third Day

Slip No. 3

Ex.4	**Spotting**	**20**

1. Identify the organism and name the disease caused by it.
2. Identify the organism and give its economic importance
3. Identify the vector; give its scientific name and the disease transmitted.
4. Identify the plant pathogenic specimen and name the causative organism.
5. Identify the medium and the growth of the organism.
6. Give the laboratory use(s) of the labeled chemical/stain/reagent.
7. Enlist important ingredients of labelled media and give its use
8. Identify the instrument and give its use(s) in microbiological laboratory.
9. Identify the biochemical reaction and give its mechanism/principle.
10. Give important contribution(s) of the labeled scientist.

Ex.5 (A)	**Viva voce**	**10**
Ex.5 (B)	**Viva voce**	**10**
Ex.1	Continuation of first / second day work and final submission of results.	
Ex.2	Continuation of first/second day work and final submission of results, (if any).	
Ex.3	Continuation of first/second day work and final submission of results, (if any).	

------XXXXX------

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SET ONE

Uni. Seat No._____

GUJARAT UNIVERSITY

B.Sc. SEMESTER-V EXAMINATION : Dec. 2023

MATHEMATICS PAPER-306(PRACTICAL-II, SECTION-A,BASED ON MAT-303)

Max. Marks 35

Date : 12-12-2023

Time:Three Hours

Note : 1. There are 4 Questions. Attempt any **TWO**:-
2. Each question carry equal marks.
3. Viva and Journal carries 7 marks jointly.

ATTEMPT ANY TWO:

Q-1 (A) Obtain all the fifth roots of $1+\sqrt{3}i$.

(B) Check whether function $f(z)=z^2\bar{z}$ is analytic or not. Justify it.

Q-2 (A) Solve Find the harmonic conjugate of $u(x,y)=x^2-y^2-y$ and hence find corresponding analytic function.

(B) If $u(x,y)-v(x,y)=x^3-3xy^2-y^3+3x^2y$ then find the corresponding analytic function in terms of z.

Q-3 (A) Find the images of the curves $x=1$, $y=1$ and $x+y=1$ under the mapping $w=z^2$ and show that the angles are preserved.

(B) Find the graph of the strip $1<x<2$ under the mapping $w=\frac{1}{z}$.

Q-4 (A) Find the Fourier series for the function $f(x)=\begin{cases} x, & 0<x<\pi \\ 2\pi-x, & \pi<x<2\pi \end{cases}$

(B) Find the Fourier series for the function $f(x)=\begin{cases} 1+\frac{2x}{\pi}, & -\pi<x<0 \\ 1-\frac{2x}{\pi}, & 0<x<\pi \end{cases}$ and hence deduce that $\frac{\pi^2}{8}=\frac{1}{1^2}+\frac{1}{3^2}+\frac{1}{5^2}+\cdots$

----------*-*-*-*----------

અધ્યક્ષ
ગણિત શાસ્ત્ર વિભાગ
સરકારી વિજ્ઞાન કોલેજ
ગાંધીનગર.

(P.T.O.....)

Exam No. : _____

Government Science College

Sector - 15 , Gandhinagar.

LABORATORY JOURNAL

MICRO - BIOLOGY

Name : Mr./Miss Priyal B. Dave

Std. : Sem II Div : —

Roll No. : 591 Batch No. : I

Mfg. By : AMIN TRADERS, Ahmedabad. M. 98243 87845, 94092 17984

Government Science College

SECTOR - 15, GANDHINAGAR

Certificate

Uni Exam. No. _____ Semester : II

This is to certify that the work recorded in this journal is the bonafide work of

Mr./Mrs. Dave priyal Bhadreshkumar

Roll No. 591 of B.Sc. Semester 2

of academic year 20 19 to 20 20

Total experiment done During Semester 10 out of 10

6.2.2020

Professor Incharge | Lab. Incharge | Head of the Department

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Govt. Science College
Gandhinagar-382015

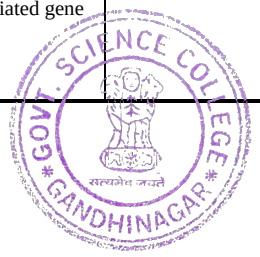
Date : _____ Exaniner's Signature

RECORD OF WORK DONE

NO.	EXPERIMENT	PAGE NO.	DATE OF EXPERIMENT	DATE OF REPORT	SIGNATURE
1.	Cultivation methods for bacteria. a. Broth culture b. Agar slope/ slant culture. c. Agar plate method. (1) Streak plate method. (2) Pour plate method (3) Spread plate method.	1-7	20/1/20		6/2/2020
2.	Cultivation of anaerobic bacteria by use of (a) Robertson's cooked meat media (b) Thioglycollate broth (c) Anaerobic Jar.	8-14	23/12/19		6/2/2020
3.	Preservation of microbial cultures	15-19	18/12/19		23/12/19

GOVERNMENT SCIENCE COLLEGE, SECTOR-15,GANDHINAGAR, BOTANY DEPARTMENT, SEMESTER-6 ASSIGNMENT, YEAR-2022-23

PAPER NO	SR. NO	251, 257, 263, 270 ↓	252, 258, 265, 271 ↓	253, 259, 266, 272 ↓	254, 260, 267, 274 ↓	255, 261, 268, 275 ↓	256, 262, 269 ↓
307	1	General characters of Pteriophytes Classification of Pteridophytes by Reimer (1954).	Structure, Reproduction and life history --Equisetum	Comparative account of morphology and reproduction in Isoetes, Selaginella, Equisetum,Marsilea and Adiantum.	Structure, Reproduction and life history -- Marsilea	Comparative account of morphology and reproduction in Isoetes, Selaginella, Equisetum,Marsilea and Adiantum.	Structure, Reproduction and life history-- Isoetes
	2	Calamitales: General Characters: Calamites and Calamostachys	Psilophytales: General Characters: Rhynia	Lepidodendrales: General Characters: Lepidodendron and Lepidocarpon	Calamitales: General Characters: Calamites and Calamostachys	Psilophytales: General Characters: Rhynia	Lepidodendrales: General Characters: Lepidodendron and Lepidocarpon
	3	Outline classification by Chamberlin Economic importance of Gymnosperms	Morphology, anatomy, reproduction and life history: GINKGOALES: Ginkgo	Outline classification by Chamberlin Economic importance of Gymnosperms	Morphology, anatomy, reproduction and life history: GNETALES: Gnetum	Outline classification by Chamberlin Economic importance of Gymnosperms	Morphology, anatomy, reproduction and life history: GNETALES: Ephedra
	4	CYCADOFILICALES Lygenopteris aldhamia, Corsotheca (Male organ)	General account of Carbon dating	BENNETTITALES Spore bearing organs.	CORDAITALES Cordaites , Cordaitanthus	PENTOXYLALES General account. Economic importance of Gymnosperms	CYCADOFILICALES Lygenopteris aldhamia, Corsotheca (Male organ)
308	5	Menispermaceae Sapotaceae	Cannaceae Boraginaceae	Chenopodiaceae Menispermaceae	Urticaceae Umbelliferae	Sapotaceae Meliaceae	Mimosaceae Cannaceae
	6	Draceana stem	Methods in plant anatomy-collection fixation, presentation and microtomy	Beet root	Nodal Anatomy – Unilacunar, Trilacunar, Multilacunar.	Bougainvillea stem	Boerhaavia stem
	7	Carbohydrate metabolism: Glycolysis Protein metabolism-Amino acid pool, Deaminaton, Transamination	General account of Vitamins Carbohydrate metabolism: Krebs cycle	Protein metabolism- Amino acid pool, Deaminaton, Transamination General account of Vitamins	Lipid metabolism: Glycerol metabolism, Alpha oxidation of fatty acids (with structures), Beta oxidation of saturated fatty acids	General account of Vitamins Carbohydrate metabolism: Krebs cycle	Lipid metabolism: Glycerol metabolism, Alpha oxidation of fatty acids (with structures), Beta oxidation of saturated fatty acids
	8	Properties of virus and structure of bacteriophage	Describe ultrastructure of Bacteria and types of bacteria	Industrial applications of bacteria - milk and milk products	Gram staining and antibiotic production by bacteria	Biopesticides and biofertilizer production by bacteria	Biodegradation of cellulose and lignin
309	9	Plant movements: Hydrotropism Biosynthesis, translocation and physiological functions Auxins	Plant movements: Geotropism Biosynthesis, translocation and physiological functions Abscisic acid	Plant movements: Phototropism Biosynthesis, translocation and physiological functions Cytokinins	Plant movements: Thigmotropism Biosynthesis, translocation and physiological functions Ethylene	Plant Growth: Growth curve, measurement of growth, factors affecting growth General account of Senescence	Plant Growth Regulators:biosynthesis, translocation and physiological functions Gibberellins
	10	Aims and objectives of Plant breeding	Procedure of Plant indroduction	Mass selections and pure line selection methods	Techniques of plant hybridization	Pedigree method	Bulk method and back cross method
	11	General account and techniques of gene mapping	DNA sequencing.	Transposable elements.	Complex translocation heterozygote.	DNA fingerprinting.	Mitochondria and chloroplast genome Coding and noncoding sequences
	12	Methods of gene transfer in plants: Physical methods-Micro injection, electroporation, particle gun.	Cryopreservation and Germplasm storage.	Biological method-Agrobacterium-mediated gene transfer	Edible Vaccines from plants.	Artificial Seeds from plant samples.	Application of Biotechnology in health and agriculture: Human insulin and vaccine production, gene therapy.



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GOVERNMENT SCIENCE COLLEGE, SECTOR-15,GANDHINAGAR, BOTANY DEPARTMENT, SEMESTER-6 ASSIGNMENT, YEAR-2022-23

PAPER NO	SR. NO	251, 257, 263, 270 ↓	252, 258, 265, 271 ↓	253, 259, 266, 272 ↓	254, 260, 267, 274 ↓	255, 261, 268, 275 ↓	256, 262, 269 ↓
310	13	Brief account: Environmental Impact Assessment (EIA)	IBP,Man and Biosphere Program (MAB)	Greenhouse Gases -CO2, CH4, N2, CFCs: Sources, effects and remedies	Brief account of Climate change and its Consequences - acid rain,	Global warming, Sea level Rise, Greenhouse effect Ozone depletion	Effects of Air, Water and Soil pollution on vegetation
	14	Principles of Garden Design Pruning- principles & kinds.	Vertical gardening- concept, principle and plant materials.	Garden operations: Plant care- Manuring, repotting,	Landscape designs in India- Buddhist, Mughals, etc.	Garden features: Paths or walkways, avenues, arches, lawn, floral beds, hedges, ground cover	Vertical gardening- concept, principle and plant materials.
	15	History and development of Ethnobotany	Plants used by tribes of Gujarat: Achyranthes aspera , Asparagus racemosus, Butea monosperma	Plants in religious belief	Methods of Ethnobotanical research	Plants used by tribes of Gujarat: Calotropis procera, Ficus religiosa , Vitex negundo.	General account of Sacred groves
	16	Forest types of India	Wild life and biosphere reserves	Timber Extraction and Paper industry	Benefits of Forest : Commercial , Ecological and Aesthetical	Wood- Physical properties, structural features and identification of wood	General account of benefits of Forests products- major products- lumber, timber, firewood minor products- medicines, oils
311	17	Definition and branches Horticulture, Importance and Scope of Horticultur	Classification of Horticultural Crops- Root and tuber crops, fruit crops and vegetable crop	Garden tools and equipments	Definition and branches Horticulture, Importance and Scope of Horticultur	Classification of Horticultural Crops- Root and tuber crops, fruit crops and vegetable crop	Garden tools and equipments
	18	Physical texture and composition of soil Soil types Soil pH	Water needs, how and when to water	Application of fertilizers, biofertilizers, organic fertilizers	Physical texture and composition of soil Soil types Soil pH	Water needs, how and when to water	Application of fertilizers, biofertilizers, organic fertilizers
	19	Vegetative Propagation methods- cutting, layering, grafting	Preparation of beds	Topiary	Method of sowing seeds	Potting, repotting and transplantation	Weeding,defoliation, pruning
	20	Greenhouse cultivation sand	Floriculture Terrariums	Organic gardening	hydroponics and aeroponics	Sand gravel culture	Floriculture Terrariums

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सत्यमेव जयते

GOVERNMENT SCIENCE COLLEGE

Sector – 15, Gandhinagar-382016

Principal

Dr. Mahendra G. Bhatt

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Tel. (O) : 079-23222352 **(M) : 94267 37221**

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Botany Department

Tour Report, B.Sc Sem 5 2022-23

Sr. No	Exam Seat No.	Enrollment No.	Full Name	Place	Page No.
1	4169	202002102926	CHAUDHARY ALPESHBHAI VIRABHAI	Pavagadh Forest	1
2	4170	202002102928	CHAUDHARY APILBHAI GOVABHAI	Pavagadh Forest	1
3	4172	202002104798	PUNADIYA DHAVALKUMAR SHANTILAL	Pavagadh Forest	1
4	4176	202002102696	AHIR LAKHMAN DEVRAJ	Pavagadh Forest	1
5	4180	202002102958	CHAUHAN NIRALIKUMARI JAGATSINH	Pavagadh Forest	2
6	4181	202002102988	DAMOR NITINKUMAR LALUBHAI	Pavagadh Forest	2
7	4182	202002103309	PRAJAPATI PANKTIBEN BHANUBHAI	Pavagadh Forest	2
8	4184	202002103417	VADSARA RIYA MUKESHBHAI	Pavagadh Forest	2
9	4185	202002103067	KATARA ROHITBHAI BABUBHAI	Pavagadh Forest	3
10	4186	202002102961	CHAUHAN TUSHARSINH DHARMENDRASINH	Pavagadh Forest	3
11	4187	202002103385	SONI UDAY MUKESHKUMAR	Pavagadh Forest	3
12	4188	202002103032	HUMBAL VAIDIK SUBHASHBHAI	Pavagadh Forest	3
13	4189	202002103433	VAGHELA VISHALSINH LALSINH	Pavagadh Forest	3
14	4174	202002103303	PRAJAPATI KHUSHI VIJAYKUMAR	Pavagadh Forest	4
15	4179	202002103389	SUTHAR NAVINKUMAR DINESHJI	Pavagadh Forest	5
16	4171	202002102732	CHAVDA CHHAYABEN PRAVINSINH	Indroda Nature Park, Gandhinagar	6
17	4173	202002103302	PRAJAPATI JYOTI SHIVCHARAN	Indroda Nature Park, Gandhinagar	7
18	4175	202002103136	PADSUMBIYA KINJAL HEMANTBHAI	Indroda Nature Park, Gandhinagar	7
19	4177	202002102987	DAMOR MEHULBHAI SANJAYBHAI	Indroda Nature Park, Gandhinagar	7
20	4178	202002102912	CHAUDHARI MITTALBEN DINESHKUMAR	Indroda Nature Park, Gandhinagar	8
21	4183	202002103325	RAIYANI PRIYANK CHANDUBHAI	Indroda Nature Park, Gandhinagar	8
22	4190	202002103124	MORADIYA YASH AKHILBHAI	Indroda Nature Park, Gandhinagar	9

Government Science College, Gandhinagar

Department of Mathematics

Assignment for B.Sc.(Semester-VI)

Title of course.: Analysis-II (MAT-308)

Assignment Unit 1

---

(1) Let $g \in C[a,b]$ and $f \in C^1[a,b]$ such that f has a derivative which never changes sign on $[a,b]$. Prove that there is $c \in [a,b]$ such that $\int_a^b f(x)g(x)dx = f(a)\int_a^c g(x)dx + f(b)\int_c^b g(x)dx$.

(2) If $f, g \in R[a,b]$, then prove that $f^2, fg \in R[a,b]$. Further, if f is bounded away from zero, then $f/g \in R[a,b]$.

(3) Let $g \in R[a,b]$ and assume that $m \le g(x) \le M$ for all $x \in [a,b]$. If f is continuous on $[m,M]$, then $h(x) = f(g(x))$ is Riemann integrable on $[a,b]$.

(4) Examine the validity of the expression $\frac{2\pi^2}{9} \le \int_{\frac{\pi}{6}}^{\frac{\pi}{2}} \frac{2x}{\sin x}dx \le \frac{4\pi^2}{9}$.

(5) Prove or disprove : $f \in R[a,b]$ if and only if $|f| \in R[a,b]$.

(6) Define improper integral of first and second kind. Test the convergence of $\int_0^\infty e^{-x}dx$ and $\int_{-\infty}^\infty \frac{1}{1+x^2}dx$.

(7) Is $f \in R[0,5]$? Where $f(x) = [x]$. Justify.

(8) By an example prove that the equation $\int_a^b f'(x)dx = f(b) - f(a)$ is not always true.

(9) Let $f(x) = x[x]$, $x \in [0,3]$. Find $\int_0^3 f(x)dx$.

(10) Let $f(x) = x|x|$, $x \in (-1,1)$. Find $\int_{-1}^1 f(x)dx$.

(11) Find an example of a function in each of the following cases:
   - (a) Bounded on $[a,b]$ but not Riemann integrable.
   - (b) Riemann integrable on $[a,b]$ but not continuous.
   - (c) Riemann integrable on $[a,b]$ but neither continuous nor monotone on $[a,b]$.

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Government Science College, Gandhinagar Department of Mathematics - Saved

Responses 102 | Preview | Style | Collect responses

Department of Mathematics (15 Points)

MAT 201 Advanced Calculus
Internal Theory Examination
24 November, 2020

1. Enter your full name as per your marksheet *

Enter your answer

2. Roll No or the number assign to you by college as repeater *

Enter your answer

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MAT 304 unit 1 MCQ test

Self Assessment -1

* Required

1. Which of the following is not correct? * (2 Points)

- Objective that we aim to maximize or minimize
- Constraints that we need to specify
- Decision variables that we need to determine
- Decision variables are to be unrestricted

2. Which of the following is not correct about LPP? * (2 Points)

- All constraints must be linear relationship
- Objective function must be linear
- All the constraints and decision variables must be of either "less than or equal to" or "greater than or equal to" type.
- All the decision variables must be non negative

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3. Which of the following is not correct? * (2 Points)

- The graphical approach to an LPP is most suitable when there are only two decision variables.
- A possible solution on the graph corresponds to every point (x,y)
- The graphical approach to an LPP is applicable when the number of decision variables are more than the number of constraints
- The common region that satisfies all the constraints is called the feasible region.

4. Which of the following is not correct? * (2 Points)

- The graphical approach to the solution of LPP's cannot handle problems with more than three variables.
- A feasible solution to an LPP is one that satisfies at least one of the constraints of the problem
- An optimum solution to an LPP is a feasible solution which optimizes the objective function
- The feasible region is also termed as the solution space

5. Which of the following is not correct? * (2 Points)

- Feasible solution of an LPP is independent of the objective function
- The feasible region of an LPP must be a convex set
- The feasible region for a constraint is restricted if its '>=' or '<=' sign is replaced by a '=' sign
- It is not possible to obtain feasible solution of an LPP by graphical method.

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