



REVISED
M.Sc. 4Th Sem.(CBCS) SUMMER, 2020
(491 To 509 & 512)

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY

M.Sc. 4Th SEMESTER (C B C S) EXAMINATION OF SUMMER, 2020

-: PROGRAMME (WRITTEN) :-

TIME : 2. 30 P.M. TO 5. 30 P.M.

Sr. No	Subject	Day Date Paper	Monday 11-05-2020 I	Wednesday 13-05-2020 II	Friday 15-05-2020 III	Monday 18-05-2020 IV
1.	Physics	Nuclear and Particle Physics		Solid State Physics	Core Elective 1. Materials Science – II 2. X-rays – II 3. Nanoscience and Nanotechnology – II 4. Atomic and Molecular Physics– II 5. Applied Electronics – II 6. Methods of Theoretical Physics –II 7. Nonlinear Dynamics-II	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS Spectroscopic Application OR Optics and Optical Instruments Subject Centric Core 1. Nonlinear Geophysics 2. Experimental Techniques In Physics 3. Communication Electronics 4. Electro Acoustics
2.	Chemistry	Special I – Inorganic / Organic / Physical / Analytical		Special II – Inorganic / Organic / Physical / Analytical	Elective –Nuclear / Environmental / Polymer / Medicinal	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS Applied Anal. Chemistry-II Core Subject Centric- Spectroscopy-II
3.	Bio-Chemistry	Advanced Clinical Biochemistry		Advanced Immunology	Elective A) Toxicology OR B) Nutrition (Applied Nutritional Biochemistry)	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS Enzyme Technology Core Subject Centric Bioresearch Technology
4.	Microbiology	Virology(VIR)		Microbial Fermentation Technology (MFT)	Elective :- Any One Of The Following 1) Microbial Diversity, Evolution and Ecology (MDEE) 2) Bioinformatics (BIF)	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS 1. Advance Microbiology Core Subject Centric Vaccines And Delivery System
5.	Botany	Cell and Molecular Biology-II		Plant Biotechnology and Plant Breeding	Elective 1) Molecular Biology and Plant Biotechnology 2) Reproductive Biology of Angiosperms 3) Advanced Psychology and Hydrobiology 4) Mycology and Plant Pathology 5) Palaeobotany 6) Palynology 7) Plant Physiology	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS 1) Applied Botany Core Subject Centric- Plant Resources

Sr. No	Subject	Day Date Paper	Monday 11-05-2020 I	Wednesday 13-05-2020 II	Friday 15-05-2020 III	Monday 18-05-2020 IV
6.	Zoology	Biotechnology, Biostatistics ,Ethology,Toxicology and Bioinformatics	Special Group – Paper – II Elective Entomology Fish and Fisheries Mammalian Reproductive Physiology (MRP) Animal Physiology Cell Biology Fresh Water Zoology Aquaculture Environmental Biology Sericulture	Special Group – Paper – III Elective Entomology Fish and Fisheries Mammalian Reproductive Physiology(MRP) Animal Physiology Cell Biology Fresh Water Zoology Aquaculture Environmental Biology Sericulture	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS Applied Zoology Applied and Industrial Entomology Applied Fresh Water Fisheries Applied Human Physiology Core Subject Centric -2 Chronobiology & Radiation Biology	
7.	Environmental Science	Air and Noise Pollution Control Technology	Solid and Hazardous Waste Management	Elective - I Environment Impact Assessment and Legislation Elective –II Environmental Management	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS Fundamentals of Environmental Science-II OR Core Subject Centric Disaster Management	
8.	Statistics	Multivariate Analysis	Computational Statistics	Elective Operation Research (OLD) Reliability Theory Data Mining Time Series Analysis Industrial Statistics (NEW)	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS Applied Statistics Bio-Statistics Core Subject Centric Industrial Statistics (OLD) Actuarial Statistics Stochastic Models In Finance Statistical Pattern Recognition Operation Research (NEW)	
09.	Mathematics	Dynamical Systems	Partial Differential Equations	Advanced Numerical Methods	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS 1. Elementary Discrete Mathematics 2. Fuzzy Mathematics II 3. Linear Programming Core (Subject Centric) .Operations Research II Paper V:- Wednesday, 20-05-2020 Core Elective Paper (opt any one of the following) 1. Fluid Dynamics – II 2. Cosmology	
10.	Electronics	Electromagnetic Fields and Antennas	Digital Communications	Elective 1. Microwave and Optical Communication 2. Computer Communication	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS : Pc and Pc Interfacing Core (Subject Centric) Mobile and Satellite Communication	

Sr. No	Subject	Day Date Paper	Monday 11-05-2020 I	Wednesday 13-05-2020 II	Friday 15-05-2020 III	Monday 18-05-2020 IV
11.	Computer Science	Data Mining		Artificial Intelligence & Expert System	Elective Design and Analysis of Algorithm Embedded System Pattern Recognition	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS Advances in Information Technology Enterprise Resource Planning Supply Chain Management Total Quality Management Banking Operation And Services Information Security And Cyber Law Subject Centric 1. Parallel Computing 2. Mobile and Cyber Forensics
12.	Molecular Biology and Genetic Engineering	Plant & Animal Tissue Culture		Recombinant DNA Technology-II	Elective A) Plant Genetic Engineering B) Molecular Diagnostics C) Bioinformatics and Datamining	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS Biostatics Core Subject Centric Personality Development Through Fine Arts
13.	M.Sc. Tech. Applied Geology	Mineral Exploration (4)		Elements of Mining and Drilling Techniques(3+1)	Geomorphology, Remote Sensing and GIS(1+2+1)	Fuel Geology (Coal, Petroleum and Nuclear) (2+1+1)
14.	Information Technology	Data Warehousing and Data Mining		Artificial Intelligence and Expert System	Core Elective 1. Design and Analysis of Algorithm 2. Cloud Computing 3. Mobile Computing	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS 1. Advances in Information Technology 2. Banking Operations and Services 3. Information Security and Cyber Law Core Subject Centric 1. Enterprise Computing 2. Mobile and Cyber Forensics
15.	Biotechnology	Animal Biotechnology		Biostatistics, Bioinformatics, Ethics & Patenting	Elective A) Industrial Biotechnology II OR B) Environmental Biotechnology II	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS Molecular Biotechnology Core Subject Centric Therapeutic Medical Biotechnology
16	Geology	Ore Geology and Ore Microscopy (3+1)		Indian Mineral Deposits and Mineral Economics (3+1)	Elective 1. Exploration Geochemistry (4) 2. Quaternary Geology & Limnogeology(3+1) 3. Basin Analysis and Sequence Stratigraphy(2+2) 4. Marine Geology and Oceanography(2+2)	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS Paleobiology Core (Subject Centric) Fuel Geology (Coal, Petroleum & Nuclear)

Sr. No	Subject	Day Date Paper	Monday 11-05-2020 I	Wednesday 13-05-2020 II	Friday 15-05-2020 III	Monday 18-05-2020 IV
17.	Forensic Science	Instrumentation, Quality Management, Research Methodology and Statistics		Special Paper-I 1. Forgery and Its Forensic Detection 2. Advanced Forensic Toxicology 3. Forensic Anthropology, Odontology and Forensic Pathology 4. Cyber Security, Cyber Forensic Mobile and Cyber Forensic	Special Paper-II 1. Automated Fingerprint Identification System 2. Advanced Forensic Chemistry 3. DNA Fingerprint and Interpretation 4. Ethical Hacking and Recovery Forensic	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS Applied Analytical Chemistry-II <u>Wednesday, 20-05-2020</u> Special Paper-III 1. Forensic Linguistics 2. Forensic Pharmacology 3. Microbial Forensic and Bioinformatics 4. Digital Image Processing <u>Paper V:- Friday , 22-05-2020</u> Special Paper-IV 1. Forensic Photography 2. Forensic Analysis of Drugs 3. Wildlife and Environmental Forensic 4. Biometrics
18.	Medicinal Plant	Herbal Drugs Technology & Development (HDD)		Drug Standardization and Regulation (DSR)	Core Elective Natural Plant Products & Photochemistry-II (NPP-II) OR Forensic and Industrial Botany-II	FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS Ethnobotany (ETH) OR Core Subject Centric Cultivation and Utilization of Aromatic Plants

FOR FOUNDATION COURSE OPTIONAL – AS PER ENCLOSED LIST OF FOUNDATION COURSES OF 42 SUBJECTS

Sr.No.	Subject	4 th Papers of Semester-4
1	Mathematics	Mathematics-II
2	Physics	Physics-II
3	Chemistry	Chemistry-II
4	Bio-Technology (Ad-hoc)	Bio-Technology-II
5	Computer Science	Computer Science-II
6	Environmental Science	Environmental Science-II
7	Botany	Botany-II
8	Zoology	Zoology-II
9	Statistic	Statistics-II
10	Business Management	Business Management -II
11	Accountancy	Account & Statistics-II
12	Managerial Skill	Managerial Skills-II
13	Education Technology & Management Skills	Education Technology & Management Skills-II

14	Communication Skill	Communication Skills-II
15	Sanskrit	Sanskrit-II
16	German	German-II
17	French	French-II
18	Law	Law-II
19	Pharmaceutical Sciences	Pharmaceutical Sciences-II
20	Life skills	Life Skills-II
21	Economics	Economics-II
22	Political Science	Political Science-II
23	Sociology	Sociology-II
24	Psychology	Psychology-II
25	Philosophy	Philosophy-II
26	History	History-II
27	Public Admn	Public Admn -II
28	Buddhist Studies	Buddhist Studies-II
29	Gandhian Thought	Gandhian Thought-II
30	Dr. Ambedkar Thought	Dr. Ambedkar Thought-II
31	Rashtrasant Tukdoji Maharaj Thought	Rashtrasant Tukdoji Maharaj Thought-II
32	Travel & Tourism	Travel & Tourism-II
33	Personality Development	Personality Development-II
34	Cosmetic Technology	Cosmetic Technology-II
35	Hospitality Management	Hospitality Mgt. -II
36	Chemical Engineering	Chemical Engineering-II
37	Chemical Technology	Chemical Technology-II
38	Civil Engineering	Civil Engineering-II
39	Electrical Engineering	Electrical Engineering-II
40	Mechanical Engineering	Mechanical Engineering-II
41	Electronics Engineering	Electronics Engineering-II
42	Pali Prakrit	Pali Prakrit-II

M.Sc. 6TH SEMESTER(CBCS) EXAMINATION OF SUMMER, 2020
-: PROGRAMME (WRITTEN) :-
TIME : 2.30 P.M. TO 5.30 P.M.

Sr. No	Subject	Day Date Paper	Wednesday 22-04-2020 I	Friday 24-04-2020 II	Monday 27-04-2020 III	Wednesday 29-04-2020 IV
1.	M.Sc. (Tech.) Applied Geology	Engineering Geology and Geotechniques.		Applied and Industrial Micropaleontology	Core Elective 2. Optional Any One 1. Petroleum Exploration 2. Basin Analysis and Sequence Stratigraphy 3. Marine Geology and Oceanography	Foundation Course 2. Geology 2 ; Paleobiology OR Core Subject Centric 2 1) Geodesy and Mapping

GENERAL INSTRUCTIONS FOR SEATING ARRANGEMENT

The name of the Examination Centre is already printed on the Admission Card of each candidate. However, it is notified for general information of the candidates that, the seating arrangement for the Examination Centre will be notified separately seven days prior to the commencement of the written examination at the respective Examination Centre. The candidates concerned will also be able to get the necessary information about his/her Examination Centre from the concerned College of the candidate.

NAGPUR.

Date: 15th February, 2020.

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Sd/-
Director
Board of Examination & Evaluation
Rashtrasant Tukadoji Maharaj
Nagpur University.