

**REGULATIONS & COURSES OF STUDIES OF 4 & ½ YEARS  
BACHELOR OF PROSTHETICS & ORTHOTICS (BPO): 2023**



**THE ODISHA UNIVERSITY OF HEALTH SCIENCES,  
BHUBANESWAR- 751009**

## **REGULATIONS & COURSES OF STUDIES FOR THE 4 & ½ YEARS BACHELOR OF PROSTETICS & ORTHOTICS DEGREE - 2023**

### **1. Title and commencement of the Program:**

- (a) These regulations may be called " Bachelor of Prosthetics & Orthotics (In short BPO) Regulations 2023".
- (b) They shall come into force from the current academic year 2023-24.
- (c) The Regulations and courses of studies prescribed are in conformity with Rehabilitation Council of India and subject to modification by the Academic Council and Executive Board of the Odisha University of Health Sciences, Bhubaneswar from time to time.

### **2. Introduction:** An increasingly growing India, as life expectancy increases with medical technology and applications, comes with a growing demand for geriatric care. A significant part of geriatric care, and also care for people with disabilities, is prosthetics and orthotics to ensure mobility and better quality of life. Prostheses (artificial legs and hands) and orthoses (braces and splints) enable people with physical impairments or functional limitations to live healthy, productive, independent, dignified lives and to participate in social life. Without access to prostheses or orthoses, people who need them are often excluded, isolated and locked into poverty, which increases the burden of morbidity and disability.

The Bachelor of Prosthetics and Orthotics program integrates the study of the human body with the effects of forces on the body (biomechanics) as well as the materials and procedures utilized in the fabrication of prostheses and orthoses.

### **3. Goal:** The goal is to rehabilitate persons with locomotor disabilities or neuromuscular disorder and bring them in to the mainstream of life and excel in their lives.

### **4. Objective: The objective is to equip the students with knowledge and skills to:**

- a) To assess, prescribe and provide comprehensive prosthetic and orthotic management to the individual and the community appropriate to his/her position as a member of the health care team.
- b) Be competent to take preventive, supportive, corrective and rehabilitative steps in respect to the commonly encountered problems related to prosthetics and orthotics.
- c) To carry out Evidence Based Practice in prosthetics and orthotics.
- d) To appreciate the psycho-social, cultural, economic, and environmental factors affecting health, and develop humane attitude towards the patients/relatives, in discharging one's professional responsibilities.
- e) Be familiar with the various National policies and acts related to empowerment of Persons with Disabilities.
- f) Acquire basic management and administrative skills in the areas of materials, financial and human resources related to prosthetics and orthotics.
- g) Develop the communication skills to establish effective communication with the stakeholders.
- h) Practice prosthetics & orthotics ethics in patient care, service delivery, and research.
- i) Develop attitude for self-learning and acquire necessary skills including the use of appropriate technologies.

### **5. Eligibility for admission to the Course:**

- (i) +2 or equivalent with 50% marks in aggregate. The applicant / candidate should have studied

Physics, Chemistry and any one of the subject Biology / Mathematics and English.

(ii) Candidates who have passed Diploma in Prosthetics & Orthotics from a RCI recognized institute shall be eligible for admission directly in 3rd year of BPO Programme.

(iii) **Physical fitness Certificate:** Every candidate before admission to the course shall be required to submit College Leaving Certificate, Migration Certificate (if applicable) in original, Physical Fitness Certificate and a declaration before the Principal / Director of the Institution that

- (a) I am not continuing in any Degree Course under any State, Deemed, Central University and Autonomous Body.
- (b) I have not been involved in any kind of criminal and unlawful activities in the past.

Provided further, after fulfilment of all condition (s), the University on receipt of student detail with prescribed fees, shall issue University Registration Number as per OUHS First Statute-2023, which shall be used as Roll Number for all Examination (s).

6. **Duration:** The duration of the programme is of four and half academic years (inclusive of 6 months of internship), which can be completed in a maximum of 6 (Six) years from the academic year of admission to the programme as per the norms, and regulations prescribed by Rehabilitation Council of India. However, in case of lateral entry, s/he shall have to complete within a period of 4 (four) years.

7. **Medium of instruction:** English shall be the medium of instruction for all the subjects of study and for examination of the course.

8. **Commencement of the Course:** The course will commence from August / September 1<sup>st</sup> of every year.

9. **Academic Year:** The academic year shall be twelve months and commencing on the first day of enrolment into the course.

10. **Attendance:** The component wise attendance percentage shall be as under;

Subjects	Eligibility criteria
Subjects taught in one phase	75% theory, 80% Practical
Internship	100%

11. **Course Cycle, Codes and Structure:** The four- and half-year full-time programme consists of four-years excluding 6 (six) months compulsory internship. There shall be 29 (Twenty-Nine) numbers of theory subjects, 10 (Ten) Numbers of Practical / Clinical including and a Project in the Fourth Year. The total marks for the Course is 4000 including the Project.

The total number of digits used in the course is 08 (Eight).

- i. The 1<sup>st</sup> two digits (Numerical) indicates the Year of Courses of Studies.
- ii. The 3<sup>rd</sup> digit (Letter) indicates the "Faculty" Allied Health Sciences.
- iii. The 4<sup>th</sup> & 5<sup>th</sup> digits (Letters) indicate the Course Code "BPO".
- iv. The 6<sup>th</sup> digit (Numerical) indicates the Year.
- v. The 7<sup>th</sup> & 8<sup>th</sup> digits (Numerical, Numerical and Letter) indicate sequence of the Theory Subject (s) of the Year or Practical.

**Table No 01 Course Structure:**

Code	Title	Contact Hours		Internal Assessment		Theory	Practical	Total Marks
		Theory	Practical	Theory	Practical			
<b>First Year</b>								
23APO101	Anatomy	120	40	--	--	100	--	100
23APO102	Physiology	90	30	--	--	100	--	100
23APO103	Workshop Technology & Material Science	80	20	10	15	75	--	100
23APO104	Applied Mechanics & Strength of Material	80	20	10	15	75	--	100
23APO105	Biomechanics-I	60	--	25	--	75	--	100
23APO106	Environmental Science	60	--	--	--	100	--	100
23APO107	*Prosthetics Science -I	80	--	25	--	75	--	100
23APO108	Orthotic Science - I	80	--	25	--	75	--	100
23APO1P1	*Prosthetics Science -I	--	230	--	25	--	75	100
23APO1P2	Orthotic Science - I	--	230	--	25	--	75	100
<b>Total</b>		<b>650</b>	<b>570</b>	<b>95</b>	<b>80</b>	<b>675</b>	<b>150</b>	<b>1000</b>
<b>Second Year</b>								
23APO201	Pathology	80	--	--	--	100	--	100
23APO202	Orthopaedics, Amputation Surgery & Imaging Science	80	20	--	--	100	--	100
23APO203	Community Rehabilitation & Disability Prevention	60	--	10	15	75	--	100
23APO204	Biomechanics II	70	30	10	15	75	--	100
23APO205	Computer Science & Graphical Communication	40	60	10	15	75	--	100
23APO206	Pharmacology	60	--	--	--	100	--	100
23APO207	*Prosthetics Science -II	80	--	25	--	75	--	100
23APO208	Orthotic Science - II	--	300	25	--	75	--	100
23APO2P1	*Prosthetics Science -II	80	--	--	25	--	75	100
23APO2P2	Orthotic Science - II	--	300	--	25	--	75	100
<b>Total</b>		<b>570</b>	<b>650</b>	<b>80</b>	<b>95</b>	<b>675</b>	<b>150</b>	<b>1000</b>

Code	Title	Contact Hours		Internal Assessment		Theory	Practical	Total Marks
		Theory	Practical	Theory	Practical			
<b>Third Year</b>								
23APO301	Basic Electronic	40	20	--	--	100	--	100
23APO302	Biomechanics- III	80	--	25	--	75	--	100
23APO303	Assistive Technology	80	--	25	--	75	--	100
23APO304	Research Methodology & Biostatistics	60	--	--	--	100	--	100
23APO305	Psychology & Sociology	60	--	--	--	100 (50+50)	--	100
23APO306	*Prosthetics Science -III	80		25	--	75	--	100
23APO307	Orthotic Science - III	--	320	25	--	75	--	100
23APO3P1	*Prosthetics Science -III	80	--	--	25	--	75	100
23APO3P2	Orthotic Science - III	--	320	--	25	--	75	100
23APO3P3	Computer Science & Graphical Communication	40	60	--	--	100	--	100
<b>Total</b>		<b>520</b>	<b>720</b>	<b>100</b>	<b>50</b>	<b>700</b>	<b>150</b>	<b>1000</b>
<b>Fourth Year</b>								
23APO401	Prosthetics Science -IV	60	--	25	--	75	--	100
23APO402	Orthotic Science - IV	60	--	25	--	75	--	100
23APO403	Management & Administration	80	--	--	--	100	--	100
23APO404	Prosthetics Clinical Practice		160	25	--	75	--	100
23APO405	Orthotic Clinical Practice		160	25	--	75	--	100
23APO4P1	Prosthetics Science -IV		160	--	25	--	75	100
23APO4P2	Orthotic Science - IV		160	--	25	--	75	100
23APO4P3	Prosthetics Clinical Practice		250		25	--	75	100
23APO4P4	Orthotics Clinical Practice		250		25	--	75	100
23APO4PP	Project Work*		200		--	--	100	100
<b>Total</b>		<b>180</b>	<b>1340</b>	<b>100</b>	<b>100</b>	<b>400</b>	<b>400</b>	<b>1000</b>
	Internship- Prosthetics & Orthotics							

**Note: - All theory & Practical examinations in the discipline of Prosthetics and Orthotics shall be conducted only by the regular appointed Prosthetic and Orthotic Faculty / Teachers from a teaching institution. \*Joint project is allowed.**

**12. Plan of Studies (Teaching, Training & Practice):** The plan of studies consists of classroom lectures, practical and laboratory demonstrations, bed side clinics, self-directed academic activities and clinical postings.

**12.1. First Year:** In first year, the student shall undertake 1220 hours of teaching and practice on Anatomy, Physiology, Applied Mechanics & Strength of Material, Biomechanics-I, Environmental Science, Prosthetics Science - I and Orthotics Science -I including workshop technology and material science.

**12.2. Second Year:** In the second year, s/he will be required to undertake 1220 hours of teaching and practice on Pathology, Orthopaedics & Amputation Surgery & Imaging Science, Community Rehabilitation & Disability Prevention, Biomechanics- II, Computer Science & Graphical Communication, Pharmacology, and Prosthetics Science - II and Orthotics Science -II.

**12.3. Third Year:** In third year, s/he will be required to undertake 1240 hours of teaching and practice on in Basic Electronics, Bio Mechanics- III, Assistive Theory, Research Methodology & Biostatistics, Computer Science & Graphical Communication and Prosthetics Science - III and Orthotics Science -III.

**12.4. Fourth Year:** In fourth year, s/he will be required to undertake 1520 hours of teaching and practice on in Prosthetic Science IV, Orthotics Science- IV and Management & Administration. Each Student -Trainee shall take a project work under supervision of a guide. Project work has to be well documented and presented in essay form. The major focus will be trainee's original work which she or he has to present prior to final examination. The subject and the guide should be chosen within four weeks from the day of admission to the fourth year.

**12.5. Internship-** After successful completion and passing in relevant theory and practical / clinical subject (s) of first - fourth year (s), the student shall be required to undertake three months clinical practice in orthotics and three months in prosthetics besides project work. Internship will start immediately after the declaration of result of final year & candidate is declared pass in all four years. The place of postings of the students for internship will be decided by the Head of the Department / Head of the College / Institution. Supervision will be provided by the faculties. However, in-service candidates shall be allowed to under his / her internship in his / her parent organization.

Every student should maintain records of the number of hours of clinical work in different areas and institutions. This should be certified by the Head of the Department of Prosthetics & Orthotics. Internship shall be extended by the number of days the student remains absent. Grading and evaluation will be done by the institute, where the candidate is doing internship. The student will be required to repeat those postings in which his/her performance is found unsatisfactory. Internship completion certificate would be awarded jointly by Head of the Department, and Head of the Institution after the successful completion of the internship.

**13. Scheme of Internal Assessments, Practical / Clinical, Assignment / Project (wherever applicable) and passing criteria:**

**13.1. Theory- Practical:** Twenty-five per cent of the marks (25 marks) prescribed for theory and Practical / Clinical paper shall be given on the basis of internal assessment as follows.

- (i) Internal Assessment will be calculated by conducting minimum two class tests, two assignments, examination / practical examination. The test (s) shall be completed as per the academic calendar of the University.
- (ii) Marks shall be given on the basis of the average marks scored in these examinations / assessments as follows:  
First Test- 25 marks, and Second Test: 25 marks.

**13.2. Practical – Clinical:** The distribution of internal marks for clinical work shall be prescribed by the College at the time of commencement of the academic year and the student should be able to meet the following learning objectives:

- i. Assess the medical condition of a patient related to their orthotic or prosthetic management using appropriate investigative techniques, which include patient history taking and clinical testing.
- ii. Formulate an optimal prosthetic and orthotic solution using information from the patient assessment, other members of the health care team, medical charts, etc.
- iii. Communicate and discuss patient goals and expectations and discuss and debate the prosthetic management with the patient, co-workers and other members of the health care team.
- iv. Reliably measure and capture a positive cast or image of patient's appendages, while correctly positioning the body part and if appropriate, apply the necessary corrective force system.
- v. Identify, prescribe and justify selection of appropriate materials and components in the fabrication of the prostheses or orthoses.
- vi. Construct the prostheses or orthoses by using appropriate fabrication techniques in preparation for the initial fitting.
- vii. Fit the prostheses or orthoses to the patient using static and dynamic functional criteria established from the original assessment.
- viii. Evaluate the quality of the prostheses or orthoses fit to ensure the appropriate interface contouring, force application and trim lines.
- ix. Identify problems related to device fit and/or alignment and be able to suggest and implement appropriate correction.
- x. Assess and solve prosthetic or orthotic problems as part of short- and long-term patient care.
- xi. Maintain accurate records of patient treatment and follow up as well as confidentiality of such information. Communicate effectively with patient, co-workers, and other health care professionals in such a manner that will ensure the highest quality of service and reflect a professional attitude on the part of the student. Educate the patient and/or caregiver on use, care and function of the prostheses or orthoses.
- xii. Understand the methodology of problem identification, problem solving in a process that includes all stake holders, with the patient at the centre.

**13.3.** At the time of practical / clinical examination, each candidate shall submit to the examiners his / her note books duly certified by the Clinical Teacher / Head of the Department as a bonafide record of the work done by the candidate.

**13.4.** The practical record shall be evaluated by the concerned Head of the Department / Internal Teacher and the practical record marks shall be submitted to the University 30 days prior to the commencement of the theory Examinations. In respect of failed (Theory) candidates, the marks awarded for record at previous examination will be carried over for the subsequent examination.

**13.5. Participation in academic activities:**

- a) **Assignment:** It is an individual task and takes the form of written work. The topic is assigned by the course instructor pertinent to their current course. The topics for the assignment comprise of writing essays/or reports on topics that:
  - involve a critical component and have debatable/opposing views
  - Is a new development/ or opinion pertinent to the curriculum but not included in the syllabus yet
  - Involves to collect, synthesize and draw conclusions of the information collected from literature.
- b) **Oral Presentations:** It is a group activity, consisting of two students in a group. The groups may be constituted randomly or by the choice of the students. Individual presentation could be considered for the final year and internees. These are to encourage verbal communication skills in students and also to assess organization and creativity.
- c) **Record:** The purpose of the record book is to document the activities or experience during the lab works associated with the course. A procedure to document the activities, experiments or case-studies are explained as appropriate or required by the course.
- d) **Case Observation:** In case observation, a student shall be required to know the type of cases, assessment procedures, and interventions in case-to-case basis. These observation reports will be required to submit before the course instructor / therapist for periodical review and guidance.

**14. Eligibility criterions for appearing University Examinations:**

A candidate shall be eligible to carry forward all the courses if a s/he fulfills the following criterions and hereafter prescribed under Regulation 18.1.

In addition,

- (i) Attended 75 % theory and 80% practical classes,
- (ii) Passed (50%) in Internal Assessment (s) Theory and Practical,
- (iii) Not been debarred for any objectionable mis-conduct or malpractice by the Institution, and University.

**15. Examinations [University (Theory & Practical)]:**

**15.1.** There shall be annual examination at the end of each academic year. A candidate securing a minimum of 50% marks in internal assessments of individual subjects and 50% marks in internal clinical evaluations (clinical assessment, client contact hours and internal viva) conducted by the College / Institution will only be eligible and allowed to register and appear for university examinations of the respective year. Each candidate will be given maximum three attempts to clear the annual theory or practical / clinical examination. A regular student shall register for all theory and practical subject as a whole.

Provided further, the College / Institution shall submit the marks to the University before registering the eligible students for appearing annual examinations of the year. In the event, a College / Institution fail or does not submit the mark (s) before the cut-off date, it shall be treated that no examination (s) have been conducted, and thereby the students shall not be allowed to register for appearing Annual Regular Examinations.

**15.2.** Theory examinations: Each theory paper of the examinations conducted by the University shall be valued by one examiner and marks rounded to the next integer shall be awarded to the candidate.

**15.3. Practical Examinations: First, Second, Third Year, and Fourth Year:** The University practical / clinical Examination (s) carrying 75 (Seventy-five) marks shall be conducted by one internal examiner and preferably two external examiner (s) appointed by the University.

**16. Registration:** A candidate shall be eligible to register for Annual (Regular / Back) Examination only when s/he has fulfilled college and corresponding university criterions.

(i) The College / Institution shall register the subjects of eligible students with the University on payment of a fee as notified by the University towards conduct of Regular / Back Theory examinations. The College / Institution shall retain 15% of the University Examinations fees to meet the expenditure of Examination Centre. However, such retention of fees shall not be applicable in case of Back Paper or Supplementary Examinations.

(ii) The College / Institution shall follow uniform Question pattern / template / Answer Booklets and Records for conducting Internal Assessment and Practical Tests.

**17. Passing Heads:** The passing head (Theory and Practical / Practicum) is as under;

(i) A Student is required to obtain a minimum of 50% in each of the theory papers, internal assessment, practical and clinical exams for a pass.

(ii) A Student will not be able to appear for university theory exam if s/he has not passed in his / her internal assessment and practical / clinical component.

(iii) A Student will have to pass the clinical examination of the given year to proceed to the next year.

(iv) A student shall be declared to have passed the examination if he/she obtains the following minimum qualifying marks: -

(a) 50% of Marks in Internal Assessment (I.A) – Theory & Practical / Clinical.

(b) 50% of Marks in the University Theory Examination.

(c) 50% of Marks in the University Practical / Clinical Examination.

**18. Promotion to Higher Year, Re-admission after discontinuation or Break of Study into the Course:**

**18.1.** (a) Candidates shall be permitted to keep the second, third and fourth year carrying not more than Two Theory and Two Practical / Clinical University Examination subjects in the first year or immediate lower year Annual Examinations.

(b) Each candidate will be given maximum 3 (Three) attempts to clear the annual theory or practical / clinical examination. However, absent or non-availing a chance shall be treated as a chance.

**18.2.** A candidate will be allowed for re-admission;

- a) If s/he did / could not register for the annual examinations.
- b) If the candidate is eligible, and has permissible tenure to complete the remaining tenure / years of six year to complete the course.

Provided further, s/he shall be required to apply in the prescribed form with fees as prescribed for the purpose, and shall be admitted in the course in force (Dual Syllabus).

**19. Supplementary Examination:** There will be a supplementary examination for final year theory subjects within three months from the date of publication of fourth year examination to extend a

chance to clear the failed theory subjects of fourth year if any only. However, a candidate shall not be eligible; if s/he has not registered for the 4<sup>th</sup> Year Annual Examinations, and accordingly has not appeared the fourth years annual University Examinations.

A student having more backlog after availing the chance, shall not be allowed to re-appear in the subsequent years Supplementary Examination meant for the regular final year students only. Such student (s) will be allowed re-appear back theory subjects only with the student in Regular Examinations.

**20. Classification of successful candidates and award of Degree:** The University shall adopt Marking and division practice.

**20.1.** Candidate will be awarded division after successful completion and passing in all subjects of studies and internship. The percentage of marks will be calculated from aggregate of total marks obtained in all the four years University examinations.

(i) First Division - 60% and above in the aggregate marks of all subjects.

(ii) Second Division – 50% or more but less than 60% in the aggregate of marks of all subjects.

**20.2.** A candidate will be awarded Degree in Bachelor in Prosthetics & Orthotics (BPO) to a candidate who complete the prescribed period, four academic years courses of Studies, has passed in all subjects (Theory & Practical / Clinical) and completed 6 months compulsory Internship.

**21. Record and Evaluation Guidelines:** The Practical Answer Booklet, Project Assignment / Record Book shall be as per the guidelines to be issued in this regard shall be strictly followed by the Examiners while assessing a practical component.

**22. Withdrawal from Course, Struck off from the rolls of the College / Institution Admitted and withdrawal of Degree:**

**22.1.** The University upon application, shall cancel the registration number issued to the candidate, and issue migration certificate on payment of fee as to be prescribed by the University.

**22.2.** Any student who does not clear the Bachelor of Prosthetics & Orthotics Course in all the subjects within a period of 6 years (Including Internship) availing not more than three number of chances to clear a theory subject from the year of admission year shall be discharged from the course.

**22.3.** Any student found to have obtained admission in fraudulent manner, if the documents furnished for gaining admission by any student are found to be forged / false / doctored at any stage of study.

**22.4.** If any student is found to be involved in serious breach of discipline.

**22.5.** A degree awarded by the University may be withdrawn if it is found at the later stage that the candidate has submitted any forged document or ineligible at the time of admission to the course.

**23. Medal (s), Award (s) & Prize (s):** The University shall notify as and when decided by the Academic Council and Executive Body from time to time.

**24. Discretionary Power:** Notwithstanding anything contained in the above, in case of any doubt or difficulty as to the interpretation of these Regulation (s), the matter shall be referred to the Vice Chancellor and his / her decision in this behalf, subject to the provisions of the OUHS Act - 2021, and OUHS 1<sup>st</sup> Statute - 2023 shall be final.

Registration no:

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Total Number of Pages: (XX)		Course: BPO
		SUB_CODE:
(... <sup>th</sup> ) Year Regular / Back / Supplementary Examination: 20		
SUBJECT NAME:		
BRANCH:		
Max Time: 3 Hours		Sitting: 1 <sup>st</sup> 10.00 AM to 1.00 PM
Max Marks: 100		
Q. CODE: (To be allotted by the University)		
All Questions are compulsory. Illustrate answer with diagrams wherever relevant / required		
The figures in the right-hand margin indicate marks.		
Q 1	Long Answer Question (Answer any one out of two)	
	a)	
	b)	
Q 2	Long Answer Question (Answer any one out of two)	
	a)	
	b)	
Q 3	Long Answer Question (Answer any one out of two)	
	a)	
	b)	
Q 4	Short Answer Questions (Focused) (Answer any two out of three)	
	a)	
	b)	
	c)	
Q 5	Short Answer Questions (Applied) (Answer any two out of three)	
	a)	
	b)	
	c)	
Q 6	Short Answer Case based question (Answer any two out of three)	
	a)	
	b)	
	c)	
Q 7	Short Answer problem-based question (Answer any two out of three)	
	a)	
	b)	
	c)	
Q 8	Objective Type (Selection / Supplied)	
	a)	
	b)	
	c)	
	d)	
	e)	

Registration no:

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Total Number of Pages: (XX)		Course: BPO
		SUB_CODE:
(... <sup>th</sup> ) Year Regular / Back / Supplementary Examination: 20		
SUBJECT NAME:		
BRANCH:		
Max Time: 3 Hours		Sitting: 1 <sup>st</sup> 10.00 AM to 1.00 PM
Max Marks: 75		
Q. CODE: (To be allotted by the University)		
All Questions are compulsory. Illustrate answer with diagrams wherever relevant / required		
The figures in the right-hand margin indicate marks.		
Q 1	Long Answer Question (Answer any one out of two)	
	a)	
	b)	
Q 2	Long Answer Question (Answer any one out of two)	
	a)	
	b)	
Q 3	Long Answer Question (Answer any one out of two)	
	a)	
	b)	
Q 4	Short Answer Questions (Focused) (Answer any two out of three)	
	a)	
	b)	
	c)	
Q 5	Short Answer Questions (Applied) (Answer any two out of three)	
	a)	
	b)	
	c)	
Q 6	Short Answer Case based question (Answer any two out of three)	
	a)	
	b)	
	c)	
Q 7	Short Answer problem-based question (Answer any two out of three)	
	a)	
	b)	
	c)	
Q 8	Objective Type (Selection / Supplied)	
	a)	
	b)	
	c)	
	d)	
	e)	

Annexure- A (Series)

Registration no:

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Total Number of Pages: (XX)		Course: BPO
		SUB_CODE:
(... <sup>th</sup> ) Year Regular / Back / Supplementary Examination: 20		
SUBJECT NAME:		
BRANCH:		
Max Time: 1 1/2 Hours		Sitting: 1 <sup>st</sup> 10.00 AM to 11.30 AM
Max Marks: 50		
Q. CODE: (To be allotted by the University)		
All Questions are compulsory. Illustrate answer with diagrams wherever relevant / required		
The figures in the right-hand margin indicate marks.		
Q 1	Long Answer Question (Answer any one out of two)	
a)		
b)		
Q 2	Long Answer (Case Study) (Answer any one out of two)	
a)		
b)		
Q3	Short Answer Questions (Focused)	
a)		
b)		
c)		
Q 4	Objective Type (Selection / Supplied)	
a)		
b)		
c)		
d)		
e)		