

-1-

2

**ORDINANCE**

**BACHELOR OF PHYSICAL EDUCATION (B.P.Ed.)- Four Semester Course**  
(w.e.f. Session 2019-2020)

**Applicability of Regulations for the Time Being in Force**

Notwithstanding the integrated nature of a course spread over more than two academic years, the regulations in force at the time a student joins a course shall hold good only for the examinations held during or at the end of each semester. Nothing in these regulations shall be deemed to debar the University from amending the regulations subsequently and the amendment regulations, if any, shall apply to the entire student whether old or new.

1. Duration of Programme:

The duration of the course shall be two academic years, divided into four semesters.

2. Reservation:

The reservation policy of the Government of Haryana, as amended from time to time, for admission to government/government-aided educational institution shall be followed.

3. Intake:

There shall be a basic unit of fifty students for each year.

4. Eligibility:

(i) Educational Qualification: Bachelor's degree in any discipline with at least 50% marks (47.50% marks for SC candidates) and having at least participation in Inter College/Inter Zonal/District/School competition in sports and games as recognized by the AIU/IOA/SGFI/Govt. of India.

OR

Bachelor degree in Physical Education with 45% marks (42.75% marks for SC candidates).

OR

Bachelor's degree in any discipline with 45% marks (42.75% marks for SC candidates) and studied physical education as compulsory/elective subject.

OR

Bachelor's degree with at least 45% marks (42.75% marks for SC candidates) and having participated in National/Inter University/State competitions or secured 1st, 2nd or 3rd position in Inter College/Inter Zonal/District/ School competition in sports and games as recognized by the AIU/IOA/SGFI/Govt. of India.

OR

Bachelor's degree with participation in International competitions or secured 1st, 2nd or 3rd position in National/Inter University competition in sports and games as recognized by the respective federation/AIU/IOA/SGFI/Govt. of India.

OR



Graduation with 45% marks (42.75% marks for SC candidates) and at least three years of teaching experience (for deputed in-service candidates i.e. trained physical education teacher/coaches).

(ii) The condition of gradation certificate for being eligible to get admission is not required but if a student wants to get weightage of the sports certificate he should have to produce the gradation certificate issued by the concerned state. In case any State does not issue the Gradation Certificate, the following criteria will be adopted for accepting the Sports Certificate for admission to B.P.Ed.:

- a. In case of District Position holder, a certificate of authenticity from the concerned District Association/Federation duly countersigned by the District Sports Officer will be accepted.
- b. In case of State Position holder, National Participation, National Position holder & International level a certificate of Authenticity from the concerned State Association/Federation duly countersigned by the Director of Sports of the State will be accepted.
- c. In case of Inter Collegiate and All India Inter-Varsity position holders the certificate will be verified from the Director of Sports of the concerned universities.

Note: Certificates of sports and games organized by the Nehru Yuvak Kendra, Women Sports Festivals, Rural Games and Sports Festivals, Panchayats, and Invitation Tournaments will not be considered.

(iii) **Physical Efficiency Test:** All the eligible candidates will be required to qualify the Physical Efficiency Test (PET) as per the norms prescribed by the department.

5. The examination for the degree of Bachelor of Physical Education (B.P.Ed.) shall be held in four semesters to be called Semester-I, II, III and IV. The examination for the I and III semester shall be held in the month of November/ December and for the II and IV semesters in the month of April/May or on such other dates as may be fixed by University.
6. The last dates by which admission forms and fees for Semester-I, II, III and IV Examination should reach to the Controller of Examination, C.R.S.U., Jind on dates as notified from time to time. No examination form will be accepted after the notified date.
7. The candidate will be required to pay examination fees as prescribed by the University from time to time.
8. The examination will consist of papers according to syllabus as prescribed by the concerned Board of Studies.
9. The marks required to pass the examination shall be 40% marks in internal assessment in each paper separately in theory and practical and 40% in aggregate of internal, external, theory and practical.
10. There shall be internal and external examination (assessment). The relative weightage

of internal and external assessments of each theory paper shall be 20% and 80% respectively.

11. The break-up for internal assessment shall be as follows:

Criteria of awarding internal assessment (20 marks)

Sr. No.	Criteria	Marks
1.	One assignment in each paper	5 Marks
2.	One test in each paper	5 Marks
3.	One seminar/presentation in each paper	5 Marks
4.	Attendance	5 Marks
	Below 75%	0 Marks
	Up to 80%	2 Marks
	Up to 85%	3 Marks
	Up to 90%	4 Marks
	Above 90%	5 Marks

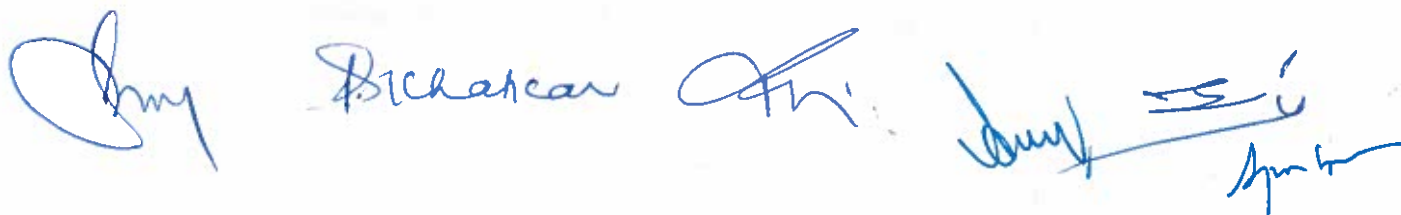
12. The question papers shall be set both in English and Hindi Languages.

13. There will be no condition of passing papers for promotion from odd semester to even semester in an academic session. To qualify for admission to Semester-III of the course, the candidate must have **Passed 50% of total papers of two Semesters in the first year.** However, students have to attend classes in each semester as per the criteria given below:

The Chairperson of the Department/Principal of the College/Director of the course may condone shortage upto 15% lectures in a subject/paper and upto 5% in practicals/tutorials in each subject/paper. These shall also include loss of attendance due to participation in cultural and sports assignments etc. Provided that a student who represents CRSU, Jind in the Inter-university Sports Tournaments/Inter University Youth and Cultural Affairs Department, as the case may be, subject to the condition that such a student shall not be allowed to appear in the examination if his attendance, after condonation on all counts, falls below 50%.

14. If a student fails to attend classes continuously for seven teaching days his/her name shall be struck off from the rolls. He/she may get readmission with the permission of the chairperson/principal within the seven working days of striking of the names with a readmission fees of Rs. 1000/-. The student may be readmitted twice in an academic year. However, if the name of student struck off third time in an academic year his/her admission shall be cancelled de-novo.

15. A Candidate placed under reappear in any paper, will be given two chances to clear the reappear, which shall be available within consecutive two years/chances i.e. to pass in a paper the candidate will have a total of three chances. One as regular student and two as



reappear candidate. In case of reappear in external examination, the internal assessment marks shall be carried forward.

Provided that he/she shall have to qualify in all the papers prescribed in B.P.Ed. course within a period of three years from the date he/she joined the course. In case he/she fails to do so within the prescribed period of three years as aforesaid he/she shall be declared fail and his admission shall be cancelled.

16. The examination of reappear papers of Odd Semester will be held with regular examination of the Odd Semester and reappear examination of the Even Semester will be held with regular examination of Even Semester. In case a candidate is placed under reappear in third (odd) semester, he/she will be given chance to re-appear in the fourth semester. But if a candidate is placed under reappear in the last semester of the course, he will be provided chance to pass the reappear with the examination of the Next Semester. It is understood that a reappear or failed candidate shall be allowed to take the examination in papers not cleared by him according to the date sheets of the semester examinations in which such papers may be adjusted.
17. After completing two years of studies (i.e. Four Semester Course); he shall not be admitted to any semester of the same course and will not have any privilege of a regular student.
18. The examination shall be open to any person who satisfies the following requirements::
  - (a) Has passed and on the rolls of the university/College throughout the academic year preceding the Part-I i.e. Semester-I & II examination.
  - (b) has his name submitted to the Registrar by the head of the Department/Principal of the College having attended not less than 75% of the total number of lectures delivered in each paper and 75% of the lectures held in Practical Work/Activities in each paper during the academic year.
  - (c) In case a candidate could not appear in the Sessional Examination owing to unavoidable circumstances or fails to secure the marks indicated and desires to appear in the University Examination as a regular student, the Head of Department / Principal may at his discretion hold a special test for the candidate(s).
19. The grace marks shall be allowed according to the General Ordinance relating to "Award of Grace Marks" of the university.
20. Students undergoing a Two Year Bachelor Course shall be awarded the Bachelor of Physical Education (B.P.Ed.) Degree on the basis of their combined score of Semester - I, II, III and IV examination.  
University Gradation norms on percentage performance bases are as under:
  - (i) First Division with Distinction 75% & above

(ii)	First Division	60% & above
(iii)	Second Division	50% to 59.9%
(iv)	Third Division	Below 50%
(v)	Fail	Below 40%

21. A candidate who has passed Bachelor of Physical Education (B.P.Ed.) Examination from this university may be allowed to re-appear as a private candidate for improving his/her division/score of marks as under

(i) The candidate who has passed the semester I, II, III and IV of the B.P.Ed. degree examination of this university and who desire to improve their marks will be permitted to appear only for theory (external) examination within a period of three years from the date of their appearance at B.P.Ed. examination.

(ii) Only one chance will be given to the candidate for each semester for improvement of performance. Such a candidate shall have to submit separate admission form and fee for each part. Such a candidate shall be allowed to appear in semester examination.

(iii) The result of such a candidate shall be declared only if the candidate improves his division/score, otherwise his result will be declared P.R.S. (Previous Result Stands).

22. Teaching (Skill and Prowess) activities for each game or athletics events will be of 21 days each in each semester.

23. Married female selected candidates shall have to submit a certificate from SMO/MO of the Civil Hospital that she is not in family way, along with an undertaking that if during the course of study, it is found that she is in family way, her admission would be liable to be cancelled IPSO-FACTO and all dues paid by her shall be forfeited.

**24. Interpretation and Amendments:**

The ordinances may be amended by the academic council and the amended ordinance, if any, shall be applicable to all the students whether old and new. Where this ordinance remains silent, the decision of the Vice-Chancellor shall be final.

*[Handwritten signatures in blue ink]*

**Scheme of Examination for B.P.Ed. w.e.f. Session 2019-2020**

PART – A	Theory Papers/Practicals	2000 Marks
PART – B	Teaching (Skill and Prowess)	700 Marks
PART – C	Class room teaching lesson	100 Marks

**Total – 2800 Marks**

**B.P. Ed.- (Semester-I)**

**Theory Marks (Including Practical): 500**

**Teaching (Skill and Prowess): 200**

**Total Marks : 700**

**Part-A**

Paper code	Paper	Internal	External	Total
BPET-101	History, Principles and Foundation of Physical Education	20	80	100
BPET- 102	Anatomy and Physiology	20	80	100
BPET-103	Health Education and Environmental Studies	20	80	100
BPET-104	Officiating & Coaching	20	80	100
BPET-105	Educational Technology	20	80	100
			<b>Total</b>	<b>500</b>

**Part-B Teaching (Skill and Prowess)**

**Game**

Practical code	Practical	Contents of Games and Sports	Internal Assessment	External Assessment
BPEP-201	Basketball/Volleyball/ Kabaddi / Kho Kho/ Badminton	Teaching of Fundamentals, Rules and Regulations and Measurements of Fields	20	80

**Note: Student have to select two games in one semester.**

**Athletics**

Practical code	Practical	Contents of Games and Sports	Internal Assessment	External Assessment
BPEP-202	Sprints/Triple Jump/Shot Put	Teaching of Fundamentals, Rules and Regulations and Measurements of Fields	20	80

**Note: Student have to select two events from the athletic event which will be taught in whole semester.**

**Contents to be covered for Games & Athletics:**

- Historical development of the concerned game/track and field event.
- Main tournaments organized at National and International level.



- c) Records/Statistics of the game /track and field event at world, Olympic, Asia, National.
- d) Awardees in the game/athletics.
- e) Books and magazines of the game /track and field.
- f) Officiating.
  - i) Play area dimensions/track and field.
  - ii) Equipment specifications
  - iii) Rules of the game/track and Field and their interpretation.
  - iv) Duties of the concerned officials.
- g) Fundamental skills /Techniques.

Note:

- The students will be required to prepare a file pertaining to each lesson given above in support of their evaluation of lesson plan and viva-voce. Candidates are required to take 10 practice lessons for each part separately. Sessionals marks will be awarded on the basis of their performance in practice lessons.
- Evaluation of lesson plan will be done by one external examiner in each case.
- Practice of lessons will be done during the teaching practice organised by the Department/college and their lessons will be supervised by the internal faculty member. *Principal/H.O.D. will certify that all the requirements pertaining to practice of teaching and Officiating has been fulfilled by the candidate.*

**B.P.Ed. (Semester-II)**

**Theory Marks (Including Practical): 500**  
**Teaching (Skill and Prowess): 200**  
**Total Marks : 700**

**Part-A**

Practical Code	Paper	Internal	External	Practical (External)	Total
BPET-106	Organization and Administration	20	80	-	100
BPET- 107	Sports Training	20	80	-	100
BPET-108	Fundamental of Computer Applications	20	60	20	100
BPET-109	Kinesiology	20	80	-	100
BPET-110	Yoga	20	80	-	100
				<b>Total</b>	<b>500</b>

**Part-B Teaching (Skill and Prowess)**  
**Game**

Practical code	Practical	Contents of Games and Sports	Internal Assessment	External Assessment
BPEP-203	Gymnastic/Football /Cricket/Softball/ Gym Training	Teaching of Fundamentals, Rules and Regulations and Measurements of Field	20	80
	Picnic	Institute should organize picnic for students		

**Note:** Student has to select two games in one semester.

**Athletics**

Practical code	Practical	Contents of Games and Sports	Internal Assessment	External Assessment
BPEP-204	Discus Throw/Long Jump/ Hammer Throw	Teaching of Fundamentals, Rules and Regulations and Measurements of Fields	20	80

**Note:** Student has to select two events from the athletic event which will be taught in whole semester.

**Contents to be covered for games & athletics.**

- a) Historical development of the concerned game/track and field event.
- b) Main tournaments organized at National and International level.
- c) Records/Statistics of the game /track and field event at world, Olympic, Asia, National.
- d) Awardees in the game/athletics.
- e) Books and magazines of the game /track and field.
- f) Officiating.
  - i) Play area dimensions/track and field.
  - ii) Equipment specifications



- iii) Rules of the game/track and Field and their interpretation.
- iv) Duties of the concerned officials.
- g) Fundamental skills /Techniques.

**Note:**

- The students will be required to prepare a file pertaining to each lesson given above in support of their evaluation of lesson plan and viva-voce. Candidates are required to take 10 practice lessons for each part separately. Sessionals marks will be awarded on the basis of their performance in practice lessons.
- Evaluation of lesson plan will be done by one external examiner in each case.
- Practice of lessons will be done during the teaching practice organized by the department/college and their lessons will be supervised by the internal faculty member.
- *Principal/H.O.D. will certify that all the requirements pertaining to practice of teaching and Officiating has been fulfilled by the candidate.*

Runahca  
\_\_\_\_\_

**B.P.Ed. Semester –III**

Theory Marks (Including Practical): 500

Teaching (Skill and Prowess): 200

Total Marks : 700

**Part-A**

Paper Code	Paper	Internal	External	Practical	Total
BPET-111	Professional Preparation	20	80	-	100
BPET- 112	Research Methodology and Statistics	20	80	-	100
BPET-113	Sports Psychology	20	60	20	100
BPET-114	Measurement and Evaluation in Physical Education	20	80	-	100
BPET-115	Sports Journalism	20	80	-	100
				<b>Total</b>	<b>500</b>

**Part-B Teaching (Skill and Prowess)  
Game**

Practical Code	Practical	Contents of Games and Sports	Internal Assessment	External Assessment
BPEP-205	Handball/Swimming/Wrestling/Tennis/Table Tennis	Teaching of Fundamentals, Rules and Regulations and Measurements of Fields	20	80
	Leadership Training Camp	One camp for students related to leadership qualities development has to be organized by the concerned institute under the aegis of government or semi-government body and certificate for this has to be issued to the participants (atleast for 3 days)		

Note: Student has to select two games in one semester.

**Athletics**

Practical code	Practical	Contents of Games and Sports	Internal Assessment	External Assessment
BPEP-206	High Jump/Javelin Throw/Hurdles	Teaching of Fundamentals, Rules and Regulations and Measurements of Fields	20	80

Note: Student have to select two events from the athletic event which will be taught in whole semester.

Contents to be covered for games & athletics.

- Historical development of the concerned game/track and field event.
- Main tournaments organized at National and International level.
- Records/Statistics of the game /track and field event at world, Olympic, Asia, National.

- d) Awardees in the game/athletics.
- e) Books and magazines of the game /track and field.
- f) Officiating.
  - i) Play area dimensions/track and field.
  - ii) Equipment specifications
  - iii) Rules of the game/track and Field and their interpretation.
  - iv) Duties of the concerned officials.
- g) Fundamental skills /Techniques.

**Note:**

- The students will be required to prepare a file pertaining to each lesson given above in support of their evaluation of lesson plan and viva-voce. Candidates are required to take 10 practice lessons for each part separately. Sessionals marks will be awarded on the basis of their performance in practice lessons.
- Evaluation of lesson plan will be done by one external examiner in each case.
- Practice of lessons will be done during the teaching practice organized by the department/college and their lessons will be supervised by the internal faculty member.
- *Principal/H.O.D. will certify that all the requirements pertaining to practice of teaching and Officiating has been fulfilled by the candidate.*

**B.P.Ed.- (Semester-IV)**

**Theory Marks (Including Practical): 500**  
**Teaching (Skill and Prowess): 200**  
**Total Marks : 700**

**Part-A**

Paper Code	Subjects	Internal	External	Practical	Total
BPET-116	Sports Medicine	20	60	20	100
BPET- 117	Biomechanics	20	80	-	100
BPET-118	Sports Management	20	80	-	100
BPET-119	Exercise Physiology	20	80	-	100
BPET-120	Recreation	20	80	-	100
				<b>Total</b>	<b>500</b>

**Part-B : Teaching (Skill and Prowess)**

**Athletics**

Practical Code	Practical	Contents of Games and Sports	Internal Assessment	External Assessment
BPEP-207	Marking of Athletic Track	Teaching of Fundamentals, Rules and Regulations and Measurements of Fields	20	80

Contents to be covered for games & athletics.

- a) Historical development of the concerned game/track and field event.
- b) Main tournaments organized at National and International level.
- c) Records/Statistics of the game /track and field event at world, Olympic, Asia, National.
- d) Awardees in the game/athletics.
- e) Books and magazines of the game /track and field.
- f) Officiating.
  - i) Play area dimensions/track and field.
  - ii) Equipment specifications
  - iii) Rules of the game/track and Field and their interpretation.
  - iv) Duties of the concerned officials.
- g) Fundamental skills /Techniques.

**Note:**

- The students will be required to prepare a file pertaining to each lesson given above in support of their evaluation of lesson plan and viva-voce. Candidates are required to take 10 practice lessons for each part separately. Sessionals marks will be awarded on the basis of their performance in practice lessons.
- Evaluation of lesson plan will be done by one external examiner in each case.
- Practice of lessons will be done during the teaching practice organized by the department/college and their lessons will be supervised by the internal faculty member.
- *Principal/H.O.D. will certify that all the requirements pertaining to practice of teaching and Officiating has been fulfilled by the candidate.*



**Paper Code -BPET-101**

**History, Principles and Foundation of Physical Education**

Time allowed: 3 Hours

Max Marks: 100

(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS**

- a) There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT-I**

- 1 **Physical Education:** Introduction, Scope, Aims and Objectives of Physical Education, Relationship of Physical Education with Health Education and Recreation. Misconceptions about Physical Education. Modern Trends in Physical Education.
- 2 **Physical education as Profession:** Introduction to the Profession of Physical Education, Contribution of Physical Education to the achievement of the Aims and Objectives of Education.
- 3 **Philosophies of Education as Applied to Physical Education:** Idealism, Naturalism, Realism, Pragmatism and Existentialism.

**UNIT-II**

- 1. **Biological Basis of Physical Education:** Biological Activities, Nature and Need, Use, Disuse and Overuse. Growth and Development, Age and Sex difference between Boys and Girls, Classification of Physique, General Principles of Growth and Development.
- 2. **Psychological Basis of Physical Education:** Learning, Types of Learning, Laws of Learning, Learning Curve, Play and its theories, Transfer of Training.
- 3. **Sociological Basis of Physical Education:** Socialization Process, Social Nature of man and Physical Activity, Sports as Cultural Heritage of Mankind, Traditions and Sports, Competition and Cooperation, Leadership Qualities.

**UNIT-III**

- 1. **Physical Education in Ancient Period:** Greek-Homeric age, Period of Greek civilization, its cities and states.
- 2. **Spartan and Athens:** Education System, the Origin and Development of Ancient Olympic Games.
- 3. **Physical Education in Various Countries:** Germany, Russia, Denmark, U.S.A. China, Australia and U.K

**UNIT-IV**

- 1. **Physical Education in India:** History of Physical Education in Ancient India, Pre and Post-Independence developments of physical education. Contribution of G.D Sondhi and Padam Shree Dr. P. M. Joseph in the field of Physical Education in India.
- 2. **Organizations and Institutes:** All India Council of Sports (AICS), Sports department Punjab (SDP), Sports Authority of India (SAI), Indian Olympic Association (IOA), Young Men Christian Association (Y.M.C.A.), Laxmibai National Institute of Physical Education(LNIPE),
- 3. **Awards, Honors and Eminent Personalities:**  
**National Awards:** Arjuna Award, Rajiv Gandhi Khel Ratna Award, Dronacharya Award, MAKA Trophy, Youth Services and Scouts and Guides.  
**Contribution of Eminent Educationist in Physical Education:** Johan Basedow, Salims, Guts Muths John, Spiess, Nachategall, Ling.

**References**

- Charles, A. Bucher Harold M. Borrow Foundations of Physical Education, 1968.
- M.L. Kamlesh & : Principles and History of Physical Education, 1971.
- M.S. Sangral Van Dalen & Bonnet :A World History of Physical Education, 1971.

*Phumia*  
*Sharma*  
*Ch*

*Sharma*

*Sharma*

*Sharma*

**Paper Code -BPET-102  
ANATOMY & PHYSIOLOGY**

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS:**

- a) There shall be **nine** questions in all. First question is **compulsory and** will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**Unit-I**

- 1. **Anatomy & Physiology:** Introduction, Need and Importance in the field of Physical Education and Sports, Regional Anatomy, Systemic Anatomy, Gross and Microscopic Anatomy, Normal Anatomical Position and its importance.
- 2. **Cell:** Introduction of Cell, Tissue, Organ and System, Microscopic Structure and Functions of Cell, Properties of living Cell.
- 3. **Tissue:** Introduction, Classification, Structure, Functions and Types.

**Unit-II**

- 1. **Blood:** Composition, Function and Coagulation.
- 2. **Skeletal System:** Introduction of Skeletal system, Classification of Bones, Joints and its Classification, Structure and Functions of Joints, Basic Movements of Joints.
- 3. **Muscular System:** Introduction, Classification, Functions of muscles, Microscopic Structure of Skeletal Muscle, Mechanism of Muscular Contraction.

**Unit-III**

- 1. **Digestive System:** Introduction, Structure and Functions, digestion of food (Absorption and Assimilation of food)
- 2. **Circulatory System:** Introduction, Structure and Function of heart, Types of Circulation, Blood Pressure, Pulse Rate and its relevance in sport.
- 3. **Respiratory System:** Introduction, Structure and Function of Respiratory Organs, Mechanism of Respiration, Types of Respiration, Respiratory Volume and its Importance.

**Unit-IV**

- 1. **Excretory System:** Introduction, Structure and Functions of the Kidney and Skin. Composition of Urine.
- 2. **Nervous System:** Introduction, Central Nervous System, Autonomous Nervous System, Parts of the Brain (Name and Position only), Structure of the Spinal Cord.
- 3. **Endocrine System:** Introduction, Location and Structure of different Glands and Pancreas.

**References**

- Pearce Evelyn. (1992). Anatomy & Physiology for nurses, Calcutta: Oxford University press.
- Sedey, Rod R. (1992) Anatomy & Physiology. St.louis: Mosby
- Tortora G.J. (1996). Introduction to Human Body. (4th Ed.) Clifornia: Addison Wesley.
- Marieb Elaine N. (1984). Human Anatomy and Physiology (3<sup>rd</sup> Ed.). Cal: The Benjamin Cumming
- Wilmore, Jack H and Costill, David L. Physiology of Sports and Exercise. Human kinetics, 1994.
- Hoeger, Werner W.K, Hoegen, Sharon A. Principles and Labs for fitness and wellness. 7th ed 2004.
- Wilson Kathleen J. W. Anatomy and Physiology, Health and illness. 6th Edition. Churchill Livingstone Edinburgh, 1987.

*[Handwritten signature]*

*[Handwritten signature]*

*[Handwritten signature]*

*[Handwritten signature]*

Paper Code –BPET-103

**HEALTH EDUCATION AND ENVIRONMENTAL STUDIES**

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS**

- a) There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT-I**

- 1. Health : Introduction, Concept, Dimensions, Spectrum and Determinants of Health, Health Education, Health Instruction, Health Supervision.
- 2. Health Education : Introduction, Aims, Objectives, Principles of Health Education and Methods of Communication in Health Education.
- 3. Types of Health : Personal Health, Mental Health, Environmental Health, Occupational health.

**UNIT-II**

- 1. Health Problems : Communicable and Non-Communicable Diseases, Health Hazards of Modern Age - Obesity, Malnutrition, Adulteration in Food, Environmental Sanitation and Explosive Population. Health Problems in India and their control.
- 2. Personal and Environmental Health and Hygiene : Introduction, School Health Programme, School Health Services, Health Instruction. Healthful school Living (Healthy School Environment) Evaluation in Health Education. Role of nutrition and environment in promoting Health.
- 3. Hygiene and Sanitation : Personal Hygiene, Nutritional Services, Health Appraisal, Health Record, Disease caused due to Poor Hygiene and sanitation, their prevention and treatment. First-Aid and Emergency Care.

**UNIT-III**

- 1. Environment Science : Introduction, Scope, Need and Importance of Environmental Studies.
- 2. Environmental Education : Introduction, Concept of Environmental Education, Historical background of Environmental Education, Celebration of various days in relation with Environment.
- 3. Recycling : Introduction, Plastic Recycling & Prohibition of Plastic bag/cover. Role of School in Environmental conservation and Sustainable

**UNIT-IV**

- 1. **Natural Resources and Environmental Issues** : Water Resources, Food Resource, Forest Resources, Wildlife Conservation and Species Extinction and Energy Resources. Their Issues regarding Use and Over Exploitation. Environmental issues in India and their solutions.
- 2. **Effects and Control** : Measures for Air Pollution, Water Pollution, Soil Pollution, Noise Pollution, Thermal Pollution, Radioactive Pollution, Population growth and environmental quality. Carbon footprint and Consumerism.

**Issues and Management** : Climate Change, Global Warming, Acid Rain, Ozone Layer Depletion, solid and E-Waste management nuclear waste management, deforestation and Holocaust, their Management, Government policies, Role of Pollution Control Board. Eco friendly meaning and concept.

**References**

- Aggarwal, K.C. (2001), Environmental Biology, Bikaner : Nidhi Publication Ltd.
- Frank, H. & Walter H. (1976), Turners school health education, Saint Louis : The C.V. Mosby Company.
- Demir, A. (n.d.) The School health education, New York : Harber and Brothers, Odum. E.P. (1971) Fundamental of Ecology. USA : W.B. Saunders Co.
- G.S. Kang & N.S. Deol "Health and Physical Education", 21<sup>st</sup> Century Publication, Patiala

*[Handwritten signatures and initials in blue ink, including 'Sharma', 'S. K.', and others.]*

*[Handwritten signatures and initials in blue ink, including 'S. K.', 'S. K.', and others.]*



-17-

10

**Paper Code –BPET-104**  
**OFFICIATING AND COACHING**

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS**

- a) There shall be **nine** questions in all. First question is **compulsory and** will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**Unit-I**

1. **Officiating:** Introduction, Nature, Principles and Scope of officiating and coaching.
2. **Coach:** Introduction, Characteristics, Qualities of a Good Coach, Relationship of a Coach with Athlete/ Player, Qualifications (Educational and Professional) of a coach.
3. **Coaching:** Introduction, Psychological aspect of Coaching, Philosophy of Coaching and Bench Coaching.

**Unit-II**

1. **Referee:** Introduction, Conditions for a good Referee / Umpire and Measures for Improving the Standard of Referee / Umpire.
2. **Officials:** Officials required for conducting a Standard Athletic Meet, their Duties and Responsibilities, Equipments required for Conducting each Event, Dress code for Officials.
3. **Duties of Officials:** Mechanism of Officiating, their Positions and Signals in games (Football, Basketball, Badminton, Kabaddi, Volleyball, Handball, Hockey, Kho-Kho, Wrestling, Tennis).

**Unit-III**

1. **Rules and Regulations of Games:** Football, Basketball, Badminton, Kabaddi, Volleyball, Handball, Hockey, Kho-Kho, Wrestling, Tennis. Rules and their interpretation.
2. **Track and field:** Construction of Standard Track and Throwing Sectors, Relay races.
3. **Throws and Jumps:** Rules and Regulations of High jump, Long jump, Triple jump, Pole Vault, Shot Put, Discus throw, Javelin throw, Hammer Throw.

**Unit-IV**

1. **Ethics:** Introduction, Ethical issues in Officiating and Coaching, Integrity and Values of Sports.
2. **Performas:** Preparation of TA/DA bills and Eligibility Performa, Knowledge of eligibility rules of A.I.U and S.G.F.I.
3. **Score Sheet:** Preparation of Score Sheets for different Games and Athletics Events, Awards of Points/ Scores in Score Sheet.

**References**

- John, V,Bunn : The Arts of officiating Sports, Prentice – Hall, Inc., Englewood Cliffs, N.J. John, W.Dunn : scientific Principles of Coaching , Prentice Hall, Englewood Cliffs, N.J.
- H.C.Buck : Rules of Games and Sports.
- Be Clar : Science of Coaching, A.S. Barhas and Co., New York.
- R.L. Anand : Playing Field Manual , NIS Publication.

*[Handwritten signatures and scribbles]*

-18-

**Paper Code –BPET-105**  
**EDUCATIONAL TECHNOLOGY**

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS**

- a) There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT – I**

1. **Educational Technology:** Introduction, Aims and Objectives, Applications of Education Technology in the field of Physical Education.
2. **Methods and Learning:** Introduction, an outline of Teaching Methods used Before and Now, Use of Sensory Organ in the process of Learning and Remembering.
3. **Communication:** Introduction, Types of Communication, Communication Cycle, Communication in the Class Room.

**UNIT – II**

1. **Teaching Aids:** Introduction, Importance of Teaching Aids, Criteria for Selecting Teaching Aids.
2. **Classification of Teaching Aids:** Audio Aids, Visual Aids, Audio-Visual Aids.
3. **Advantages and Suggestions for Effective Use of Selected Teaching Aids:** Verbal, Chock Board, Charts, Models, Slide Projector, Over Head Projector, Motion Picture, Self Experiment and Projects.

**UNIT – III**

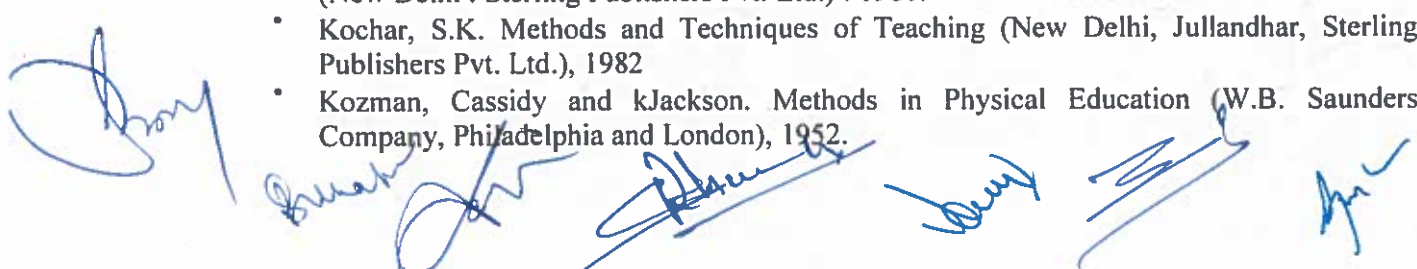
1. **Questioning:** Introduction, Purpose of Questioning, Classification of Questioning, and Techniques of asking questions.
2. **Programmed Learning:** Concept of Programmed Learning, Fundamental Principles of Programmed Learning, Steps involved in Preparation of Programme.
3. **Team Teaching:** Introduction, Guiding Principles of Team Teaching, Advantages of Team Teaching.

**UNIT IV**

1. **Micro Teaching:** Introduction, Concepts and Features of Micro Teaching, Steps, Principles and Limitations of Micro Teaching.
2. **Simulation Teaching:** Introduction, Steps, Advantages of Simulation, Limitations of Simulation.
3. **Teaching Machines:** Introduction, Values of Teaching Machines, Machine versus Teacher.

**References**

- Amita Bhardwaj, New Media of Educational Planning". Sarup of Sons, New Delhi-2003
- Bhatia and Bhatia. The Principles and Methods of Teaching (New Delhi : Doaba House), 1959.
- D.D. Aggarwal," Educational Technology" Sarup of Sons, New Delhi -2004.
- Jagannath Mohanty, "Educational Technology' Deep & Deep Publication. Pvt. Ltd. New Delhi.2003
- K. Sampath, A. Pannirselvam and S. Santhanam. Introduction to Educational Technology (New Delhi : Sterling Publishers Pvt. Ltd.) : 1981.
- Kochar, S.K. Methods and Techniques of Teaching (New Delhi, Jullandhar, Sterling Publishers Pvt. Ltd.), 1982
- Kozman, Cassidy and kJackson. Methods in Physical Education (W.B. Saunders Company, Philadelphia and London), 1952.



**ORGANIZATION AND ADMINISTRATION**

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS:**

- a) There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT-I**

- 1. **Organization and Administration:** Introduction, Need, Principles and Characteristics of Organization and Administration.
- 2. **Qualification and Responsibility:** Personal Qualification and Responsibilities of Physical Education Teacher, Pupil Leadership.
- 3. **Facilities Management:** Types of Facilities/ Infrastructure- Indoor, Outdoor, Playfields: Area, Location, Layout and Care.

**UNIT-II**

- 1. **Equipment Management:** Need, Importance, Procedure for Purchase of Sports Equipments, Equipment care and Maintenance and how to right off equipments.
- 2. **Program Planning:** Introduction, Steps in Planning, Principles of Planning in Physical Education.
- 3. **Time Table Management:** Need and Importance, Factors Affecting Time Table, Teacher Pupil Ratio and Teaching Load.

**UNIT-III**

- 1. **Organization of Physical Education and Sports at different levels:** Intramurals, Extramurals, School, University and National level, Sports Tour Management (Physical Education Teacher as Manager of the Team).
- 2. **Instructional Program:** Introduction, Design and Management of Instructional program.
- 3. **Gymnasium and Swimming Pool:** Need, Location, Construction, Dimensions, Maintenance and Supervision.

**UNIT-IV**

- 1. **Curriculum Development:** Curriculum Design, Nature, Aims and Objectives, Basic Principles and Steps in Curriculum Construction.
- 2. **Record Keeping:** Introduction, Importance of Keeping Record, Types of Records, Stock Register
- 3. **Budget:** Introduction, Objectives and importance of Budget in Program Planning in Physical Education, Essential Qualities of a Good Budget.

**References**

- Knapp. C & Hagn. E. P. Teaching Methods for Physical Education, New York. Mc Graw Hill Book Co Inc. 1953.
- Sossing N.L. Progressive Methods & Teaching Secondary School, Mehton D, Administration of Physical Education (New York: The Ronald Press C. 1968).
- Lisa Pike masteral exis, Caro A. Barr Marry A. Hums "Principles and Practice of Sports management". Jones and Bartlett Publishers. 2005.
- M. L. Kamlesh "Methods of teaching".
- Jawaid Ali Khan "Sports Management" KSK Publishers, New Delhi

*[Handwritten signatures and scribbles in blue ink at the bottom of the page]*

**Paper Code –BPET-107  
SPORTS TRAINING**

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS:**

- a) There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT-I**

- 1. **Sports Training:** Introduction, Aims, Objectives, Nature and Principles of Sports Training.
- 2. **Training Load:** Introduction, Load and Adaptation, Types of Training Load, Structure, Factors, Components and Principles of training load.
- 3. **Recovery:** Introduction, Phases, Means of Recovery and its Importance in Sports Performance.

**UNIT-II**

- 1. **Physical and Motor Fitness:** Introduction, Components of Physical and Motor Fitness, Means and Methods of their development.
- 2. **Warming-Up and Cooling Down:** Introduction, Methods and its Importance.
- 3. **Training Methods:** Weight Training, Circuit Training, Interval Training, Fartlek Training, Plyometric Training, Continuous Method Training.

**UNIT-III**

- 1. **Planning:** Introduction, Principles and Types of Training Plan.
- 2. **Periodization:** Introduction, Types, their Aims and Contents.
- 3. **Talent Identification:** Pre-requisites and Conditions for Developing suitable Young Athlete, Principles of early recognition of Athletic Talent, Basic Factors Determining Performance and Important Indicators to determine Athlete's Aptitude.

**UNIT-IV**

- 1. **Psychological Preparation:** Introduction, Psychological Preparation of teams and Individuals for sports.
- 2. **Technical Training:** Introduction, Technique, Tactics, Strategy, Skill, Style, Development of Techniques and tactics.
- 3. **Environmental Factors:** Importance and Role of Environmental factors for sports performance.

**References**

- Bompa, Tudor, O. "Periodisations Training for sports": Human Kinetic (U.S.A) 1999
- Bean, Anita "The Complete Guide to Sports Nutrition : How to eat for maximum Performance", (2000)3<sup>rd</sup> Edition, Published by A & C Black Ltd. London.
- Baechle, Thomas R. and Earle Roger W. "Essential Strength Training and Conditioning",
- Human Kinetic Publisher inc. (USA). (2000)
- Dick. W. Frank. "Sports Training Principles": Lepus Birks (London) 1980.
- Harre . Dictrich." Principles of Sports Training": Sportulag (Beslin) 1982.
- Mathew, D. K. and Fox, E. L." The Physiological basis of Physical Education and Athletics": W.B. Saunders Company (Philadelphia) (1976).
- Singh, Hardyal, "Science of Sports Training". D, V, S Publications. New Delhi.1991.

*[Handwritten signatures and scribbles in blue ink at the bottom of the page]*

**Paper Code -BPET-108**  
**FUNDAMENTAL OF COMPUTER APPLICATIONS**

Time allowed: 3 Hours

Max Marks: 100  
(External: 60, Internal: 20, Practical: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS:**

- a) There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (10x 4= 40 Marks)

**Unit - I**

**Introduction to Computer:** Meaning, need and importance of information and communication technology (ICT). Application of Computers in Physical Education. Components of computer, input and output device. Application software used in Physical Education and sports.

**Unit - II**

**MS Word:** Introduction to MS Word. Creating, saving and opening a document. Formatting Editing features Drawing table. Page setup, paragraph alignment, spelling and grammar check printing option, inserting page number, graph, footnote and notes.

**Unit - III**

**MS Excel:** Introduction to MS Excel. Creating, saving and opening spreadsheet. Creating formulas. Format and editing features adjusting columns width and row height understanding charts.

**Unit - IV**

**MS Power Point:** Introduction to MS Power Point. Creating, saving and opening a ppt. File. Format and editing features slide show, design, inserting slide number, picture, graph, table. Preparation of Power point presentations.

**PRACTICAL**

**(20 Marks External)**

**Working on Windows- M.S Office**

- 1. Working on MS Word
- 2. Working on Excel
- 3. Working on PowerPoint Presentation

**References:**

Irtegov, D. (2004). *Operating system fundamentals*. Firewall Media.  
 Marilyn, M.& Roberta, B.(n.d.).*Computers in your future*. 2nd edition, India: Prentice Hall.  
 Milke, M.(2007). *Absolute beginner's guide to computer basics*. Pearson Education Asia.  
 Sinha, P. K. & Sinha, P. (n.d.).*Computer fundamentals*. 4th edition, BPB Publication.

The bottom of the page contains several handwritten signatures in blue ink. There are approximately seven distinct signatures, some of which are quite stylized and difficult to decipher. They appear to be the signatures of the paper setters or examiners.

**Paper Code -BPET-109  
KINESIOLOGY**

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS**

- a) There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT-I**

- 1. **Kinesiology:** Introduction, Scope and its Importance in Physical Education and Sports.
- 2. **Fundamental Concepts of following terms with their application to the Human Body:** Axes and Planes, Center of Gravity, Line of Gravity.
- 3. Application of Kinesiology in Athletic events.

**UNIT-II**

- 1. **Muscular System:** Introduction, Classification, Muscular Contractions, Different Roles of Muscles in Movements.
- 2. **Skeletal Muscles:** Microscopic Structure of Muscles, Factors Effecting Muscle Strength.
- 3. **Neuro Muscular Concepts of Muscles:** All and None law, Reciprocal Innervation or Inhibition & Angle of Pull.

**UNIT-III**

- 1. **Joint:** Introduction, Functions and Types, Fundamental Movements and their Terminology.
- 2. **Elbow Joint:** Structure, Bones, Ligaments and Movements. Muscles: (Structure, origin, insertion, Innervations, Action) Biceps Brachii, Brachialis, Brachioradialis, Pronator Teres, Pronator Quadratus, Triceps brachii.
- 3. **Hip Joint:** Bones, Joints, ligaments and Movements. Muscles: (Structure, origin, insertion, Innervations, Action) Iliopsoas, Sartorius, Rectus Femoris, Gluteus Medius, gluteus minimus, tensor fascia latae, gluteus maximus, Biceps Femoris, Semi-membranosus, Semi-Tendinosus, adductor group.

**UNIT-IV**

- 1. **Posture:** Introduction, Concept of Balance Posture, Causes of Poor Posture, Remedial of Bad Posture, Benefits of Balance Posture.
- 2. **Postural Deformities:** Introduction, Types, Correction of Deformities: Kyphosis, Lordosis, Scoliosis, Knock knee, Bowlegs, Flat Foot.
- 3. **Kinesiology in Daily Living:** Walking, Running, Lifting, Catching and Throwing

**References**

- Rasch & Burk "Kinesiology & Applied Anatomy" (1975) Lee & Febiger.
- Wells K. "Kinsiology" (1984) Philadelphia W.B. saunder Co.
- Copper & clesco, "Kinesiology" (1968) St, Louis, C.V. Mosby Co.
- Brower, Masion R., "Efficiency of Human movements Philadelphia, (1978) W.E.Saunder Co.
- Scott.M.gladys, "Analysis of human Motion" (1970) New York.
- Well Kaharial, F.lutegeos Kathryn, Kinesiology Scientific basic of Human Motion" (1992)
- Sunder Publishing Philadelphia

Paper Code –BPET-110  
YOGA

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS**

- There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT-I**

- Foundation of Yoga:** Introduction, Aims and Objectives, Misconception about Yoga, History and Development of Yoga, Yoga in Early Upanisads.
- Yoga and its Relationship with other Subjects:** Yoga with Philosophy, Yoga with Modern Education, Yoga with Physical Education and Sports.
- The Yoga Sutra:** General Considerations, Need and Importance of Yoga Sutra in Physical Education.
- The Ashtanga Yoga:** Yama, Niyama, Asana, Pranayama, Pratyahra, Dharana, Dhayan and Samadhi.

**UNIT-II**

- Yoga in the Bhagavad-Gita:** Karma Yoga, Raj Yoga, Jnana (Gayan) Yoga and Bhakti Yoga.
- Asanas:** Classification of Asanas with special reference to Physical Education and Sports.
- Pranayam:** Introduction, Types and its Importance.
- Effect of Asanas & Pranayam on Various Systems of the Body.

**UNIT-III**

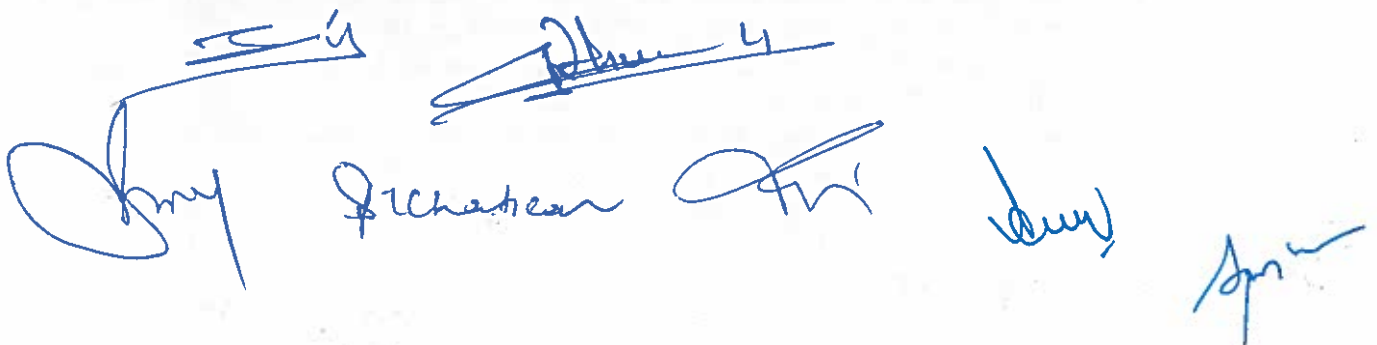
- Bandhas and Mudras:** Introduction, Types and Roles of Bandhas and Mudras.
- Kriyas:** Introduction, Types and Roles of Kriyas.
- Life of Yoga Practitioners:** Yogic Diet & Daily Routine (Din Chareya) for Yoga Practitioners.
- Influence of Relaxative, Meditative and Cultural Postures on Various Systems of the Body.

**UNIT-IV**

- Research in Yoga:** Basic, Applied and Action Research in Yoga.
- Yogic Practices and Physical Exercise:** Differences between Yogic Practices and Physical Exercise. Contribution of Yogic Practices for the Promotion of various aspects of Health and Fitness.
- Yogic System:** Yogic System of Exercise, Its broad Features, Scope and Limitations.
- Treatment:** Yoga treatment for Diseases like: Blood Pressure, Obesity, Constipation & Diabetes.

**References**

- Brown, F.Y. (2000). How to be use yoga. Delhi: Sports Publication
- Gharote, M.L. & Ganguly, H (1988). Teaching methods for yogic practices. Lonawala: Kaivalyadham.
- Shankar, G. (123998) Holistic approach of yoga. New Delhi: Aditya Publication.
- Shekar, K.C. (2003). Yoga for health. Delhi: Khel Sahitya Kendra.



**Paper Code -BPET-111**  
**PROFESSIONAL PREPARATION**

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS**

- a) There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT-I**

1. **Foundation of Professional Preparation:** Introduction, Components of Professional Preparation, Contribution of physical education in attaining ideals of Indian democracy an Forces and factors affecting educational policies and program.
2. **Historical Perspective:** Historical review of Professional Preparation in India, Professional courses being offered in professional colleges in India, Professional Preparation of Physical Education in USA, USSR and UK and beginning of Professional Preparation in the world.

**UNIT-II**

1. **Under-Graduate Preparation of Professional Personnel:** Purposes, Admission Requirements of Undergraduate preparation, Theory, Teaching practice and practical and Professional competencies to be developed.
2. **Post-Graduate Preparation:** Purposes & Admission requirements, Methods of Instruction and Professional Relations.

**UNIT-III**

1. **Teacher and Teaching:** Teaching as a career, Basic Qualities of a successful teacher, Preparation of the specialized physical education teacher, Types of teaching jobs and Types of non-teaching jobs in Physical Education.
2. **In-Service Education:** Nature and Scope, Role of teacher education institutions in In-Service education, Role of Profession in In-Service education and Course and Formal Education Experience.

**UNIT-IV**

1. **Evaluation:** Trends in Evaluating Professional Preparation, Evaluating the Program of Professional Preparation, Relation of Evaluation to Administration & Personal Program.
2. **Professional Preparation:** Modern Trends in Professional Preparation and its Importance.

**References**

- Pape, A Laurence, Means, E. Louis. A Professional Career in Physical Education. (Englewood Cliffs, N.J. Prentice Hall, Inc. 1963.)
- Jensen, R. Clayne, Administrative Management of Physical Education and Athletic Programmes. (Philadelphia Lea and Febiger, 1983.)
- Snyder and Scott. Professional Preparation in Health, Physical Education and Recreation. (Connecticut, Greenwood press, Westport, 1971).
- Bucher, C.A Foundations of Physical Education (Saint Louis) : The C.V. Mosby Company, 1975), Ed. 7.
- Agarwal, J.C. Education Administration school Urban Location and Supervision. (New Delhi: Agra Book Depot. 1967).
- Sattu, J. Bryant. Career Potentials Physical Activity. (New Jersey : Englewood Cliffs, Prentice Hall, Inc. 1971).
- Kiran Sandhu, Professional preparation and career development in physical education and sports (New Delhi: Friends Publication India ) 2004



**RESEARCH METHODOLOGY AND STATISTICS**

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS**

- a) There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT - I**

- 1. **Introduction to Research:** Introduction, Importance, Nature and Types; Characteristics of a good Research and Good Researcher; Need and Scope of research in Physical Education and Sports.
- 2. **Research Problem and Research Proposal:** Introduction, Developing a Research Question; Identifying, Locating and selecting a research problem; Characteristics of a good research problem; Writing the research proposal.
- 3. **Literature Review:** Purpose and Importance of Literature Review: Basic literature search Strategies; Steps in Literature Search.

**UNIT - II**

- 1. **Hypothesis:** Introduction, Importance, Types of Hypothesis, Characteristics of a Good Hypothesis.
- 2. **Sampling:** Introduction, Population and Sample, Characteristics, Importance of Sampling, Sampling techniques.
- 3. **Data Collection Tools:** (a) **Questionnaire:** Introduction and its types. (b) **Interview:** Introduction and its types (c) **Observation:** Introduction and its types.

**UNIT - III**

- 1. **Statistics:** Introduction, Classification and Importance of Statistics in Physical Education.
- 2. **Data analysis:** Introduction, types of Data, Presentation of Data through Graphs and Tables.
- 3. **Normal Probability Curve:** Introduction, Properties and Uses.

**UNIT-IV**

- 1. **Measure of Central Tendency:** Introduction, Merits and Demerits, Calculation of Mean, Mode and Median.
- 2. **Measure of Variability:** Introduction, Merits and Demerits, Calculation of Range, Quartile and Standard Deviation.
- 3. **Correlation:** Introduction, Properties and its types.

**References**

- Kamlesh, M.L. **Methodology of Research in Physical Education and Sport** (4th ed.). New Delhi; Sports Publication, 2014.
- Scott, M. Gladys (ed.) **Research Methods in health, physical education and recreation.** Washington, D.C., American Association for Health, Physical Education and Recreation, 1968.
- Thomas Jerry R., Nelson Jack K. & Silverman, Stephen J. **Research Methods in Physical Activity.** Human Kinetics: Champaign, 2005.
- Sharma, Y. P. **Physical Education and Research Methodology.** New Delhi; Reliance Publishing House, 1997
- Weimer. Jon **Research Techniques in Human Engineering,** Prentice Hall: New Jersey, 1994.

*[Handwritten signatures and scribbles in blue ink at the bottom of the page]*



**MEASUREMENT AND EVALUATION IN PHYSICAL EDUCATION**

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS**

- a) There shall be **nine** questions in all. First question is **compulsory and** will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT-I**

- 1. **Test, Measurement and Evaluation:** Introduction, Nature, Importance, Need, Scope and Principles of Test, Measurement and Evaluation in field of Physical Education. Relationship between test, measurement and evaluation.
- 2. **Test:** Classification of tests, Criteria of a good test: Validity, Reliability, Objectivity, Economy, Standard and Norms, Levels of Measurement, Types and Principles of Evaluation.

**UNIT-II**

- 1. **Construction of Tests:** Skill, Knowledge and Fitness test, Criteria of Test Selection- Scientific Authenticity, Administrative Feasibility (Sex appropriateness, safety, independence, differentiation, financial economy, time & reliance on other's performance) and Educational Application.
- 2. **Criteria of test Selection:** Scientific Authenticity of Test- Reliability, Objectivity, Validity and Norms Standard Economy Procedure to Establish Scientific Authenticity Administrative procedure of tests.

**UNIT-III**

- 1. **Physical Performance tests :** Copper's 9/12 Minute Run Walk Test, Harvard Step test, Motor Fitness Tests (Oregon Motor Fitness Test, J.C.R Test, Canadian Fitness Test, A.A.H.P.E.R Youth Fitness Test, Indiana Motor Fitness Test).
- 2. **Fitness Tests:** Kraus-Weber's Minimum Muscular Fitness Test, AAHPERD Youth fitness test, Instrument for Measuring Strength. Roger's Physical Fitness Index.

**UNIT-IV**

- 1. **Volleyball and Basketball skill tests:** Brady Volleyball Test, Russell Lange Volleyball Test, Johnson I Test and Knox basketball Test
  - 1. **Soccer and Hockey skill tests:** Mc Donald Soccer Test and Johnson Soccer test, Schmithals French field Hockey Skill test and SAI Hockey Skill test.

**References**

- Vijayalaksmi, M. "Evaluation in Physical Education" - (2006) Friends Publication, 6, Mukerjee Tower, Dr. Mukerjee Nagar-Delhi.
- Madhuri T . W, "Measurement and Evaluation in Physical Education" (2006) Friends Publication, 6, Mukerjee Tower, Dr. Mukerjee Nagar-Delhi.
- Mishra, Sharad Chandra "Test and Measurement in Physical Education"(2005) Sports Publication, G-6, 23/23B EMCA House, Ansari Road, Darya Ganj New Delhi.
- McCloy, C.H. "Test and Measurement in Physical Education" (2004) Friends Publication, 6, Mukerjee Tower, Dr. Mukerjee Nagar-Delhi.
- Mathew Doland .K , "Measurement in Physical Education", (1973) 4<sup>th</sup> Edition, W.B. Saunders Company, London.

*[Handwritten signatures and marks in blue ink at the bottom of the page]*

**Paper Code –BPET-115**  
**SPORTS JOURNALISM**

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS:**

- There shall be **nine** questions in all. First question is **compulsory** and will contain 10 short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT-I**

- Journalism:** Introduction, Concepts of journalism, Historical background of journalism and importance of Journalism in society and sports.
- Mode of Journalism:** Mass Media, Print, Electronic and Informal media and role of IT in Journalism.
- Ethics of Sports Writing:** Sportsman's Gratuities, Amateurism Vs Professionalism, Invasion of private life, Emphasis on winning, Sportsmanship, Sports for charity.

**UNIT-II**

- News:** Introduction, purpose and importance of news, Qualities of news- accuracy, clarity, objectivity, balance, directness, etc.; media-specific nature of news: cross platform discussion, responsibilities of sports news reporters.
- Evaluating news:** News sense and news values, 5 Ws and H, importance of 'what next?' changing concepts: readers, relationship, relevance and utility, News beats.

**UNIT-III**

- Writing Sports Features:** Types of sports features, exclusive features, fearless writing in sports, sports personalities and their thumb nail sketches, reviewing sports books, writing sports editorials, Writing weekly or fortnightly column.  
**Headlines:** Introduction, Writing Headlines, and Types of Headlines.

**UNIT-IV**

- Copy and Schedule:** Meeting Timelines, Checking facts for Accuracy, Correcting Language- Sentence Structure, Paraphrasing, Avoiding Repetition, Rewriting Leads-Copy, Value Addition, Rearranging Sequence, Art of Condensing Copy, Continuation, Consistency of style.
- News desk:** Organisation of sports news desk, Duties and responsibilities of sports sub editor, photo journalist.
- Art of Commentating and Interviewing:** Commentating sports for radio and television channels, interviewing sports persons.

**References**

- Mishra, Sharad "Text Book of Sports Journalism"( 2006-07) Sports Publication, G-6,23/23B EMCA House, Ansari Road, Darya Ganj New Delhi
- Sita Ram , "Text Book of Sports Journalism", "(2004) Friends Publication, 6, Mukerjee Tower, Dr. Mukerjee Nagar-Delhi
- Conrad .C. Fink, Sports Wing, Surjeet Publication, 7 Kholapur Road, Kamala Nagar, Delhi.
- Ahuja, B.N. and Chhabra, S.S. "Principles and Techniques of Journalism", Surjeet Publication, 7 Kholapur Road, Kamala Nagar, Delhi
- Keval. J. Kumar, "Mass Communication in India",2004, Jaico Publishing House-121, Mahatma Gandhi Road, Mumbai-400023.

Time allowed: 3 Hours

Max Marks: 100  
(External: 60, Practical: 20, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS**

- a) There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (10x 4= 40 Marks)

**UNIT- I**

1. **Sports Medicine:** Introduction, Objectives, Importance & Scope.
2. **Reaction to Injury:** Kubler and Ross Model of Athletic Reaction to Injury and Psychological Management of Injured Athlete.
3. **Sports Emergencies:** Management of Cardio-Pulmonary Resuscitation (CPR), Shock, Bleeding, Frost Bite and Heat Stroke.

**UNIT-II**

1. **Physiotherapy:** Introduction, Guiding Principles of Physiotherapy, Importance of Physiotherapy.
2. **Bandage:** Functions, Classification, Indications, Contraindications, Principles and its Application in Sports, Taping & Dressing.
3. **Common Sports Injuries:** Sports Injuries of different parts of body: Knock Out, Punch Syndrome, Wrestler Ear, Weight Lifter Black Out, Stitch at Side, Low Back Pain, Shoulder Impingement Syndrome, Tennis Elbow, Javelin Throwers Elbow, Boxer Elbow, Mallet Finger, Runners Knee, Jumper Knee, Shin Splint, Turf Toe.

**UNIT – III**

1. **Cryotherapy and Hydrotherapy:** Introduction, Advantages, Methods, Indications and Contraindications, Modalities of Rehabilitation of Sports Injuries.
2. **Electrotherapy and Heat:** Modalities, Advantages, Methods, Indications and Contraindications, Modalities of Rehabilitation of Sports injuries.
3. **Massage:** Techniques, Indications, Contraindications and Advantages of General Massage, Athletic Massage and Under Water Massage.

**UNIT-IV**

1. **Sports Rehabilitation:** Introduction, Aims, Objectives, Scope & Principles.
2. **Therapeutic Exercises:** Introduction, Scope, Principles, Classification, Effects and Uses of Therapeutic Exercises, Passive Movements (Relaxed, Forced and Passive-Stretching) Active Movements (Concentric, Eccentric and Static), Application of Therapeutic Exercise.
3. **Sports Injuries:** Causes, Symptoms, Prevention, First-Aid and Treatment of Sprain, Strain, Dislocation and Fracture.

**Practical:**

**(20 Marks External)**

- CPR Technique
- First aid for Sprain and Strain
- Bandaging

**References**

- Marcia, K.; Anderson; Susan J. Hall and Malissa, Mortin: Sports Injury Management, Lippincott Williams and Wilkins Philadelphia.

*[Handwritten signatures and scribbles at the bottom of the page]*

- G.S. Kang: Sports Medicines, Punjabi University Publication Bureau, Patiala (2002).
- Morris, B. Mellion: Sports Injuries and Athletic Problem, Surjeet Publication, New Delhi.
- William, E.; Garret, Donald; T.I. Kirkcendall and Deborah, L. Squire: Primary Care Sports Medicine, Kippincott Willams and Willkins, Philadelphia (2001)
- Philip Mafetone: Complementary Sports Medicine, Human Kinetics, Champaign (1999).
- Laila Das: Text Book of Sports Medicine, Jaypee Brothers, New Delhi (2006)
- C.S. Jaya Prakash, Sports Medicine, Jaypee Brothers, New Delhi. (2003)
- Stuart Porter: Tidy's Physiotherapy, Elsevier Woburn (2005)
- Mery, V. Laxo : Massage and Medical Gymnastics (1956)
- Tidy: Massage & Remedial Gymnastics (1976)
- Joke Ernest, L. : Scope of Exercise Rehabilitation.
- Horns, Kang, L. : Therapeutical Exercise.

*[Handwritten signatures in blue ink]*

The page contains several handwritten signatures in blue ink. From left to right, there is a large signature that appears to be 'Om', followed by a signature that looks like 'Shankar', and then a signature that looks like 'Anil'. To the right of these, there are two more signatures, one above the other, that are less legible but appear to be 'Anil' and 'Anil'.

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS**

- a) There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT- I**

1. **Biomechanics:** Introduction, Scope and importance in Physical Education and Sports.
2. **Linear and Angular Kinematics:** Describing Objects in Angular Motion:-
  - Angular Position and Displacement
  - Angular and Linear Displacement
  - Angular and Linear Velocity
  - Angular Acceleration
  - Angular and Linear Acceleration
3. **Linear and Angular Kinetics:** Mass, Weight, Inertia, Impulse, Momentum, Eccentric Force, Moment of Inertia, Torque, Coupling Force, Moment of Momentum.

**UNIT - II**

1. **Motion:** Introduction, Types and Law of motion (Newton's Law).
2. **Equilibrium:** Introduction, Types, Principles, Factors determining Equilibrium and Their Applications in sports.
3. **Projectile:** Introduction, Types, Factors Influence Projectile Trajectory.

**UNIT-III**

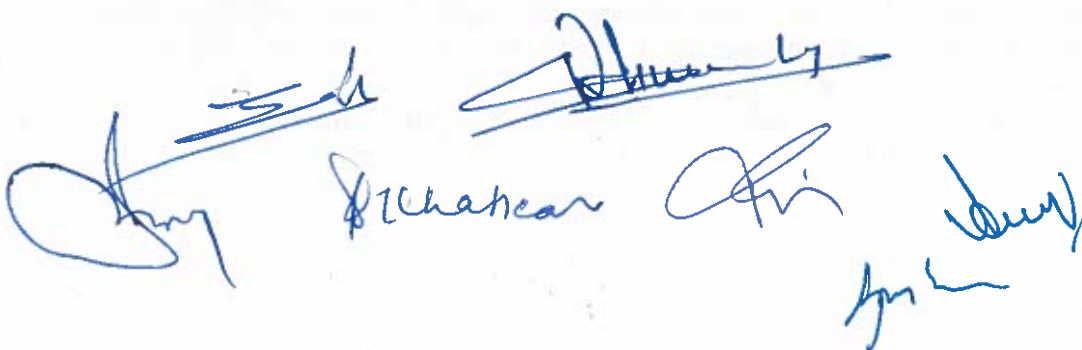
1. **Lever:** Introduction, Types, Characteristics, factor determining them and their uses in sports.
2. **Force:** Introduction, types, Classifying Forces; Addition of Forces: Force Composition, Resolution of Forces.
3. **Friction:** Introduction, Types, Characteristics, factor determining them and their uses in sports.

**UNIT-IV**

1. **Work, Power and Energy:** Introduction, definitions, Work-Energy Relationship.
2. **Biomechanical analysis:** Running, Walking, High Hurdling, Swimming (Free Style), Shot Put, Discus Throw, Long Jump and High Jump.
3. **Tools and techniques:** Different Tools and Techniques used for Biomechanical analysis of sports movement.

**Reference Books**

- Kathryn Luttgens and Nancy Hamilton: "Kinesiology-Scientific basis of Human Motion" (2001) *McGraw Hill*, New York.
- Susan J Hall: "Basic Biomechanics" (1995) *McGraw Hill*, New York.
- Peter M. Mc Ginnis: *Biomechanics of Sports and Exercise, Human Kinetics*, Champaign, USA (2005).
- James G., Hay: *The Biomechanics of Sports Techniques* (2<sup>nd</sup> Ed.), Englewood Cliffs, N. J. Prentics Hall, Inc., 1978.



**Paper Code-BPET-118**  
**SPORTS MANAGEMENT**

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS:**

- a) There shall be **nine** questions in all. First question is **compulsory** and will contain 10 short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT-I**

1. **Management in Physical Education and Sports:** Introduction, Concept, Need and Scope of Sports Management.
2. **Functions of Management:** Planning, Organizing, Staffing, Directing, Coordinating, Budgeting, Controlling and Evaluating.
3. **Teacher's Preparation:** Teacher's Preparation Before Class (Lesson Plan, Markings of the Courts, Necessary Equipment, Suitable Uniform). Handling and controlling the Class.

**UNIT-II**

1. **Management Skills:** Personal Skills, Interpersonal Skills, Conceptual Skills, Technical Skills.
2. **Managerial Roles:** Interpersonal Roles, Informational Roles, Decision Making Roles.
3. **Qualities and Qualifications of a Manager:** Personal Qualities, Leadership Qualities, Academic and Professional Qualities, Preparation of Administrative Leader.

**UNIT-III**

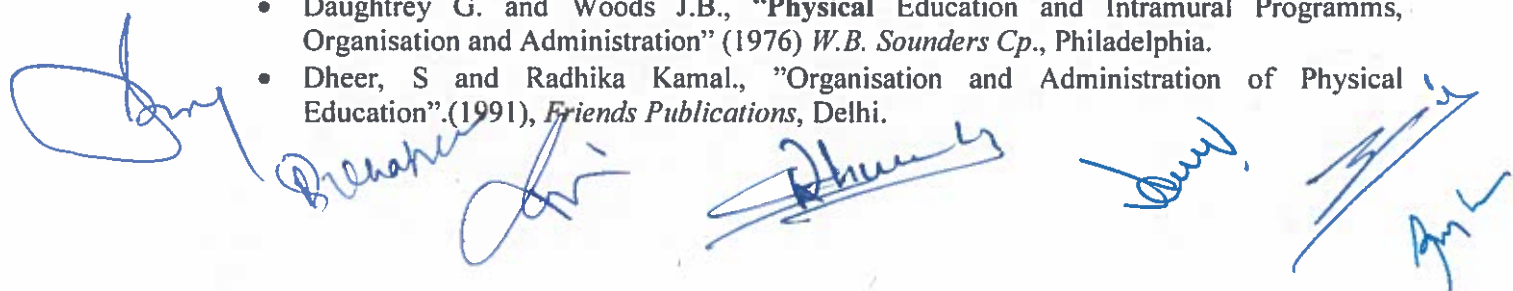
1. **Personnel Management:** Introduction, Principles of Personnel Management; Aspects of Personnel Management, Job Analysis, Description and Specification.
2. **Financial Management:** Fiscal Management, Accounting – Cost Accounting, Control, Audit, Revolving Funds, Discretionary Funds.
3. **The Budget:** Principles of Planning the Budget, Preparation of Budget, Budget preparation for Athletic Meet

**UNIT-IV**

1. **Management of Facilities:** Introduction, Administrative and General Principles of Planning Facilities, Types of Facilities, Facility Requirements, Construction and Management of Sports Infrastructures, Indoor Facilities-Gymnasium and Swimming pool.
2. **Management of Equipment and Material:** Introduction, Need, Importance, Types, Principles of Purchase of Equipments, Care and Maintenance and Disposal of Equipments.
3. **Tournaments:** Introduction, Need, Importance and Types of Different Tournaments.

**REFERENCE BOOKS:**

- Ashton D., "Administration of **Physical Education for Women**" (1968) *The Ronal Press*, New York.
- Brar, R.S. and Joshi, Rosy. "Sports Management" (2007) *Kalyani Publishers*, New Delhi.
- Bucher C.A., "Administration of **Physical Education and Athletic Programme**" (1979) *The C.V. Mosby Co.*, St. Louis.
- Daughtrey G. and Woods J.B., "**Physical Education and Intramural Programms, Organisation and Administration**" (1976) *W.B. Saunders Cp.*, Philadelphia.
- Dheer, S and Radhika Kamal., "Organisation and Administration of **Physical Education**".(1991), *Friends Publications*, Delhi.





Paper code - BPET-119  
**EXERCISE PHYSIOLOGY**

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS:**

- a) There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- b) Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT-I**

- 1. **Exercise Physiology:** Meaning, Nature, Scope and Importance of Exercise Physiology in Physical Education and Sports.
- 2. **Muscle Metabolism:** Introduction, Types, Sliding filament theory of muscle contraction, Adenosine tri-phosphate (ATP), ATP-PC system.

**UNIT-II**

- 1. **Exercise and Systems:** Effect of Exercise on Muscular System, Respiratory System and Cardiovascular System.
- 2. **Ergogenic Agents:** Introduction, Types, Drugs and Its Effects (Anabolic Steroids, Beta Blocker, Alcohol, Amphetamines, Caffeine, Cocaine, Diuretics, Morphine, Blood doping), Carbonate Loading, Phosphate Loading.

**UNIT-III**

- 1. **Nutrition and Athletic Performance:** definition of Nutrition and balanced diet, types of nutrients, components of diet, Nutrition for competition.
- 2. **Competition and Meals:** Appropriate Diet Before, During and After Competition, Carbohydrate Loading.

**UNIT-IV**

- 1. **Neurons:** Motor Unit and Bio-Electric potentials, Neuro-muscular junction and transmission of nerve impulse across it, Proprioception and Kinesthetic sense.
- 2. **Obesity and Health:** definition, causes and management of obesity, measurement of body fat by various methods, positive and negative energy balance.

**REFERENCE BOOKS**

- Morehouse, LE and Miller, A.T., "Physiology of Exercise" 1976 (Saint Louis) *Mousby Company*.
- Karpovich, P.V. and Sinning, Wayne E., "Physiology of Muscular Activity" (1971) 7<sup>th</sup> Edition. *W.B. Saunders Company*, Philadelphia.
- Bourne, Geoffery H., "The Structure and Function of Muscles" (1973) *Academic Press*, London.
- Astrand, P.O. and Rodahl Karre., "Taxt Book of work Physiology" (1979) *Mc Graw. Hill Xogakusha*, Ltd. Tokyo.
- Mathew. D.K. and Fox, E.L., "Physiological Basis of Physical Education and Athletics" (1976) *Philadelphia W.B. Saunders Company*.
- Wilmore H. Jack and Costill L. Pavid, "Physiology of Sports and Exercise" (2004) *Human Kinetics*.
- Roberys A. Robert and Robert O. Scott., "Fundamental Principles of Exercise Physiology" (2000) *Mc. Grew Hill Companies, Inc*.
- Adams M. Gene., "Exercise Physiology: Laboratory Manual" (1998) *WCB Mc Grew-Hill Companies, Inc*.

*[Handwritten signatures and scribbles in blue ink at the bottom of the page]*

Paper Code -MPET-120  
RECREATION

Time allowed: 3 Hours

Max Marks: 100  
(External: 80, Internal: 20)

**INSTRUCTIONS FOR THE PAPER-SETTER AND STUDENTS**

- There shall be **nine** questions in all. First question is **compulsory** and will contain **10** short answer type questions, spread over the whole syllabus to be answered in brief. It will carry **20 marks** i.e., two marks each question.
- Each unit shall have **two** questions and the students attempt **one** question from each unit. (15x 4= 60 Marks)

**UNIT-I**

- Introduction to Recreation:** Introduction, aims, objectives, scope, characteristics of recreation, and importance of recreation.
- Classification:** Classification of recreation, Philosophies and Principles of Recreation.
- Recreational Programs:** Criteria and Principles of selecting recreational programs.

**UNIT-II**

- Planning for recreation: objectives of recreational facilities, planning criteria of recreational facilities,** Operation of different recreation areas facilities, Maintenance of different recreation areas and facilities, Sources of Founding of recreational activities.
- Recreational Activities:** Indoor and outdoor activities, Water sports activities, Cultural activities, Adventure activities.
- Recreation and social institutions:** Family, educational institutions, community and religious organization.

**UNIT-III**

- Play:** Introduction, aims, objectives and importance of play, various theories of play, the significance of study of theories of play for the teacher of Physical Education.
- Camping:** Introduction, aims and objectives of the camp, Need and importance of the camp, Types of camp, Uses of camping.
- Organization and administration:** Organization and administration of camping, Selection and layout of the camp site, Camp program, Agencies promoting camp, Educational values of camp.

**UNIT-IV**

- Leadership Training:** Meaning and definition of a leader and leadership, Characteristics of leader, Types of leaders, Qualification and qualities of leader, Need and importance of leadership in physical education.
- Hobbies:** Introduction, types, need and importance of hobbies.
- Literary activities:** Nature and outing, Social events.

**REFERENCE BOOKS:**

- Singh Ajmer and et al, "Essential of physical Education" (2007) 3<sup>rd</sup> edition, Kalyani Publisher B-1/292, Rajinder Nagar Ludhiana Punjab.
- Thour, Mandeep "Camping Management in Physical Education"(2006) Friends Publication, 6, Mukerjee Tower, Dr. Mukerjee Nagar-Delhi.
- Jain, Deepak "Physical Education and Recreational Activities"(2002) Khel Sahitya Kendra, New Delhi.
- Dutta, A.K. "Games and Sports for Children" (2004)1<sup>st</sup> edition - Janvani Prakashan Pvt. Ltd. 30/35, Gali No. 9, Vishwas Nagar, Shahdra, Delhi-110032

*[Handwritten signatures and marks in blue ink at the bottom of the page.]*