

Series ONS

SET-4

कोड नं. **75**
Code No.

रोल नं.

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Roll No.

परीक्षार्थी कोड को उत्तर-पुस्तिका के मुख-पृष्ठ पर अवश्य लिखें।

Candidates must write the Code on the title page of the answer-book.

- कृपया जाँच कर लें कि इस प्रश्न-पत्र में मुद्रित पृष्ठ 6 हैं।
- प्रश्न-पत्र में दाहिने हाथ की ओर दिए गए कोड नम्बर को छात्र उत्तर-पुस्तिका के मुख-पृष्ठ पर लिखें।
- कृपया जाँच कर लें कि इस प्रश्न-पत्र में 26 प्रश्न हैं।
- कृपया प्रश्न का उत्तर लिखना शुरू करने से पहले, प्रश्न का क्रमांक अवश्य लिखें।
- इस प्रश्न-पत्र को पढ़ने के लिए 15 मिनट का समय दिया गया है। प्रश्न-पत्र का वितरण पूर्वाह्न में 10.15 बजे किया जाएगा। 10.15 बजे से 10.30 बजे तक छात्र केवल प्रश्न-पत्र को पढ़ेंगे और इस अवधि के दौरान वे उत्तर-पुस्तिका पर कोई उत्तर नहीं लिखेंगे।
- Please check that this question paper contains 6 printed pages.
- Code number given on the right hand side of the question paper should be written on the title page of the answer-book by the candidate.
- Please check that this question paper contains 26 questions.
- **Please write down the Serial Number of the question before attempting it.**
- 15 minute time has been allotted to read this question paper. The question paper will be distributed at 10.15 a.m. From 10.15 a.m. to 10.30 a.m., the students will read the question paper only and will not write any answer on the answer-book during this period.

शारीरिक शिक्षा (सैद्धान्तिक)
PHYSICAL EDUCATION (Theory)

निर्धारित समय : 3 घण्टे
Time allowed : 3 hours

अधिकतम अंक : 70
Maximum Marks : 70

सामान्य निर्देश :

- (i) इस प्रश्न-पत्र में कुल 26 प्रश्न हैं।
- (ii) सभी प्रश्न अनिवार्य हैं।
- (iii) जिन प्रश्नों का 1 अंक है उनका उत्तर लगभग 10 - 20 शब्दों में दिया जाए।
- (iv) जिन प्रश्नों के 3 अंक हैं उनका उत्तर लगभग 30 - 50 शब्दों में दिया जाए।
- (v) जिन प्रश्नों के 5 अंक हैं उनका उत्तर लगभग 75 - 100 शब्दों में दिया जाए।

General Instructions :

- (i) The question paper consists of 26 questions.
- (ii) All question are **compulsory**.
- (iii) Answers to questions carrying 1 mark should be in approximately 10 - 20 words.
- (iv) Answers to questions carrying 3 marks should be in approximately 30 - 50 words.
- (v) Answers to questions carrying 5 marks should be in approximately 75 - 100 words.

1. बाई देने के लिए फार्मूला लिखें। 1
Write formula for giving Bye.
2. जोखिमपूर्ण खेलों में प्राकृतिक साधन क्या होते हैं? 1
What are Natural Resources in Adventure sports ?
3. लघु पोषाहार क्या होते हैं? 1
What are the Micro Nutrients ?
4. राऊंड शोल्डर (झुके हुए कंधे) को सुधारने के लिए किन्हीं दो फ्री हैंड व्यायाम सुझाइये। 1
Suggest any two free hand exercises for correcting round shoulder.
5. प्रतियोगिता के दौरान तरल पदार्थ की महत्ता समझाइए। 1
Explain the importance of fluid intake during competition.
6. ओइस्टोपोरोसिस क्या है? 1
What is Osteoporosis ?
7. आठ फुट अप और गो टेस्ट के विधि को विस्तारपूर्वक लिखें। 1
Explain the procedure for Eight Foot Up and Go Test.
8. “स्ट्रोक वाल्यूम” क्या होती है? 1
What is “Stroke Volume” ?
9. “अब्रेशन” खेलों की किस प्रकार की चोट को कहा जाता है? 1
What kind of sports injury can be termed as “Abrasion” ?

10. “डायनामिक फ्रिक्शन” क्या होती है? समझाइए। 1
Explain, what is “Dynamic Friction” ?
11. शारीरिक क्रियाओं में भाग लेने से किस तरह बच्चों में सेल्फ एसटिम (self esteem) बढ़ती है? 1
How participation in physical activities enhances self esteem among children ?
12. ताकत (शक्ति) क्या होती है? और ताकत (शक्ति) का विकास करने की विधियों के बारे में लिखें। 3
Explain, what is strength and write the methods of improving strength ?
13. स्पाइनल कोर्ड (मेरुदण्ड) की विरूपताओं (विकृतियों) के बारे में संक्षेप में लिखें। 3
Write about the deformities of spinal curvature.
14. रिवर राफ्टिंग में भाग लेने वाले बच्चों को किन सुरक्षा उपायों की जानकारी दी जानी चाहिए? 3
What safety measures children should be taught while participating in River Rafting ?
15. टूर्नामेन्ट में भाग लेने वाली 11 फुटबाल की टीमों के लिए “नॉक आउट” आधार पर फिक्सचर तैयार करें? 3
Draw a fixture of 11 Football teams participating in a Tournament on the basis of knock out.
16. टूर्नामेन्टों के लिए विभिन्न कमेटीओं की रचना किस प्रकार की जाती है? संक्षेप में लिखें। 3
How various committies are formed for Tournaments ? Write briefly.

17. हर एक उम्र में स्पोर्ट अच्छा है। आज अन्तर्राष्ट्रीय स्तर पर प्रतियोगात्मक खेल अपनी शक्ति का प्रदर्शन है। मेडल टेली आँकड़ों में शीर्ष पर खड़े होना परोक्ष रूप से दूसरे देशों पर शीर्षता दिखाता है। इस उद्देश्य को पाने के लिए कुछ देश बढ़ते बच्चों को बहुत सख्त ट्रेनिंग देते हैं। बहुत से संगठनों ने समय-समय पर इसके खिलाफ आवाज़ उठाई है। 1+2=3

(अ) बच्चों में व्यायाम से होने वाले दो फिजियोलोजिकल बेनेफिट की व्याख्या करें।

(ब) बढ़ते बच्चों को उच्च स्तर की क्षमता वाली प्रशिक्षण देने की कमियों को विस्तार से लिखें।
Sports are good for all age groups. Competitive sport is a showcase of power at the international arena. Supremacy over the other country is indirectly shown by standing at the top of medal tally. To achieve their target few countries are imparting very strict training to growing children. Over the years many organisations have raised their voice against the intensity with which training is scheduled for making an international athletes.

(a) Elaborate any two physiological benefits of exercise in children.

(b) What are the disadvantages of giving high intensity training to the growing children ?

18. विभिन्न प्रकार की को-ओरडीनेटिव एबिलिटिस को संक्षिप्त में लिखें। 3

Briefly explain different types of co-ordinative abilities.

19. प्रोटीन भोजन का एक आवश्यक पोषक तत्व हैं, संक्षेप में वर्णन करें। 3

Write briefly about protein as an essential component of diet.

20. बचपन काल में शारीरिक व्यायामों के शारीरिक एवं शरीर क्रियात्मक सद्गुणों के बारे में विस्तारपूर्वक लिखें। 5

Write in detail about the physical and physiological advantages of physical exercises during the childhood stage.

21. “हॉवर्ड स्टेप टैस्ट” की सहायता से किस प्रकार कार्डियोवैस्कूलर फिटनेस का मापन किया जा सकता है? इसकी प्रबन्धन प्रक्रिया के बारे में विस्तारपूर्वक लिखें। 5

How the Cardiovascular Fitness is measured with the help of “Harvard Step Test”? Write in detail about its administrative procedure.

22. भारतीय विचारधारा को ध्यान में रखते हुए महिला एथलीटों का खेलों में भाग लेने के सामाजिक पहलु का आलोचनात्मक अध्ययन करें। 5

Keeping in view of the Indian Ideology, critically analyse the sociological aspect of Women Athletes in sports participation.

23. लंबी अवधि के लिए शारीरिक क्रियाओं में भाग लेने से वृद्ध लोगों में फंक्शनल फिटनेस को नियमित किया जा सकता है। विवेचना करें। 5

Participation in physical activity for a longer duration maintain functional fitness among aged population. Justify.

24. आन्तरिक एवं बाह्य अभिप्रेरणा के अन्तर को स्पष्ट करें, तथा लक्ष्य निर्धारण एवं रिइनफोर्समेन्ट को एक अभिप्रेरणा की विधि के रूप में विस्तार से समझाइए। 2+3=5

Differentiate between Intrinsic and Extrinsic motivation. Explain in detail Goal setting and Reinforcement as technique of motivation.

25. अस्थियों (हड्डियों) और संधियों में उखड़े जोड़ (डिस्लोकेशन) और अस्थि भंगों (फ्रेक्चरों) के बारे में विस्तारपूर्वक लिखें। 5

Write in detail about the Dislocation and Fractures among the bones and joint injuries.

26. वाकिंग एवं रनिंग में अन्तर समझाइए तथा विस्तारपूर्वक वाकिंग का यांत्रिक विश्लेषण करें। 1+4=5

Differentiate mechanically between walking and running. Explain in detail mechanical analysis of walking.

**SENIOR SCHOOL CERTIFICATE EXAMINATION
MARKING SCHEME**

CODE NO. 75

GENERAL INSTRUCTIONS FOR EXAMINERS:

- 1. ALL THE EXAMINERS SHOULD READ THE “MARKING SCHEME” CAREFULLY AND DISCUSS IT WITH THE HEAD EXAMINER.**
- 2. THE MARKING SCHEME IS A GUIDELINE. ANY RELEVANT AND APPROPRIATE INFORMATION PERTAINING TO ANSWER OF A QUESTION, OTHER THAN THAT GIVEN IN THE MARKING SCHEME MAY BE MARKED CORRECT .STUDENTS USING THEIR OWN LANGUAGE FOR EXPLAINING CONCEPTS BE GIVEN DUE WEIGHT AGE.**
- 3. MARKS ARE NOT NORMALLY DEDUCTED FOR SPELLING ERRORS BUT IF THE ANSWERS OBLITERATES THE RIGHT CONCEPTS OR MEANING OF CONCEPTS IS DISTORTED, MARKS MAY BE DEDUCTED ACCORDINGLY.**
- 4. IF A STUDENT HAS ATTEMPTED BOTH PARTS- QUESTION AS WELL AS ITS CHOICE QUESTION ,THE PART SECURING HIGHER MARKS IS TO BE CONSIDERED.**
- 5. MARKS ARE NOT TO BE DEDUCTED IF ANSWERS ARE NOT WRITTEN ACCORDING TO THE SEQUENCE GIVEN IN THE QUESTION PAPER.**
- 6. MARKS ARE NOT TO BE DEDUCTED FOR EXCEEDING THE WORD LIMIT.**
- 7. ALL THE HEAD EXAMINERS ARE INSTRUCTED THAT WHILE EVALUATING THE ANSWER SCRIPTS. THE ANSWERS IS FOUND TO BE TOTALLY INCORRECT , THE (X) SHOULD BE MARKED ON THE INCORRECT ANSWER AND AWARDED ‘0’ MARKS.**
- 8. NOTE: AS PER THE ORDERS OF THE HON’BLE SUPRENME COURT THE CANDIDATE WOULD BE PERMITTED TO OBTAIN THE PHOTOCOPY OF THE ANSWERSHEET ON REQUEST OF THE PAYEMENT OF THE PRESCRIBED FEE. ALL EXAMINERS/HEAD EXAMINERS MUST ENSURE THAT EVALUATION IS CARRIED OUT STRICTLY AS PER SUGGESTED VALUE POINTS FOR EACH ANSWERS AS GIVEN IN THE MARKING SCHEME.**

WISH YOU GOOD LUCK

Q.1 Write formula for giving Bye?**1**

Ans. Formula for giving Bye = Next power of 2 – No. of Teams

Upper Half = $nb + \frac{1}{2}$, Lower Half = $nb - \frac{1}{2}$

(Full Marks for formula of allotment of UF & LF, bye , $\frac{1}{2}$ Marks for power of two)

Q.2 What are Natural Resources in Adventure sports?

Ans. Biotic, Abiotic

Biotic Resources (Forest, Animals, Fossil fuel, Living & Organic Material)

Abiotic Resources (Non Living, Non Organic Material, land, fresh water, air)

Water, Air, Mountains etc.

Renewable and Non Renewable Resources

(One mark for any option)

Q.3 What are the Micro Nutrients?**1**

Ans. Micro Nutrients are Nutrients required in small quantify

1). Vitamins : A,D,E, K, C, B Complex

2) Minerals : Sodium, Calcium, Phosphorus, Potassium, Sulphur, Iron

3) Trace Elements : Copper, Iodine, Chromium, Cobalt

(Any two $\frac{1}{2} + \frac{1}{2}$)

Q.4 Suggest any two free hand exercises for correcting round shoulder?**1**

Ans.:

1. Keep your tips of fingers on your shoulder and encircle your elbow clockwise and anticlockwise direction for same number of times.
2. Pull the shoulders backward and see upward.
3. Chakra Asana, Dhanur Asana, Bhujang Asana
4. .Hold the hanging position on Horizontal Bar for sometime

(Any two $\frac{1}{2} + \frac{1}{2}$)

Q.5 Explain the importance of fluid intake during competition. ?**1**

Ans. Importance of Fluid Intake:

- 1) To maintain water Balance
- 2) Help to transport nutrients throughout the body
- 3) Help to remove waste from the body
- 4) Sustaining performance, preventing dehydration and avoiding injury.
- 5) Maintain blood sugar level and to delay fatigue.

(Any two $\frac{1}{2} + \frac{1}{2}$)

Q.6 What is Osteoporosis?**1**

Ans. Osteoporosis: Low Estrogen Levels & Poor Nutrition, Especially low calcium intake makes bone porous.

OR

Osteoporosis is a weakening of the bones due to the loss of bone density and improper bone formation.

(Any other relevant Answer)

Q.7 Explain the procedure for Eight Foot Up and Go Test?**1**

Ans. Procedure: Place the chair next to a wall & mark 8 feet in front of the chair. The subject starts by fully seated, hand resting on knees & feet flat on ground. On command 'Go' timing is started & the subject stands & walks as quickly as possible around the cone. Back to initial position and sit on to chair. A Person sit down Stop time. Perform two trials.

Q.8 What is “Stroke Volume”?**1**

Ans. Amount of blood pumped by left ventricle in per beat.
At rest period - 50 to 70 ml/beat
During Exercise – 110 to 130 ml/beat
OR
Amount of blood ejected by heart in one stroke.

Q.9 What kind of sports injury can be termed as “Abrasion”**1**

Ans. Abrasion is Soft Tissue injury. It is the injury of skin in which skin is scrapped or rubbed by friction

Q.10 Explain, What is “Dynamic Friction ” ?**1**

Ans. Dynamic friction is the force of friction which come into play when a body moves over the surface of another body.
1) Sliding Friction 2) Rolling Friction

Q.11 How participation in physical activities enhances self esteem among children?**1**

Ans.

1. Improve Physical Self
2. Self Confidence
3. Ability to solve problem
4. Stop comparing yourself to others
5. Self Discipline
6. Non-Blaming Behaviour
7. Good self care.
8. Self Respect
9. Own appearance
10. Beliefs
11. Control on emotions and behaviours

(Any two $\frac{1}{2} + \frac{1}{2}$).**Q.12 Explain, what is strength and write the methods for improving strength?****(1+2)**

Ans. Strength : Ability of the muscles to overcome the resistance / Capacity of the body to exert force / force that muscle can exert against resistance

Methods: a) Isometric b) Isotonic c) Isokinetic (Brief Explanation)

(If only points are given $\frac{1}{2}$ Marks will be awarded)

Q.13 Write about the deformities of spinal curvature?**(1+2)**

Ans. Spinal curvature deformity is related to spine
Deformities of spinal curvature: Lordosis/Scoliosis/Kyphosis.
(Three deformities and their explanation)

(If only points are given $\frac{1}{2}$ Marks will be awarded)

Q.14. What safety measures children should be taught while participating in River Rafting?**(3)**

Ans. Safety measure in river rafting:

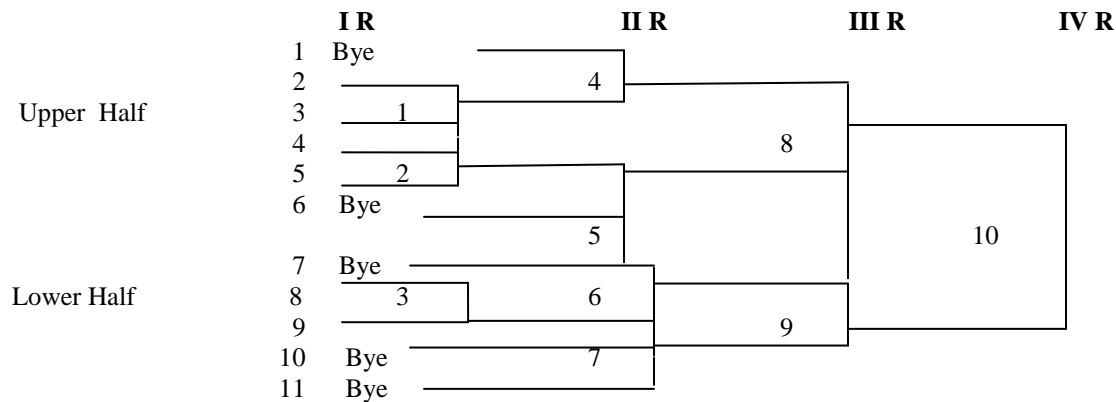
1. Do not try to go on rafting trip alone
2. Never try to go rafting in dark
3. Do not drink water from river
4. Use water proof footwear.
5. Raft under the supervision of experts
6. Do not eat leaves, fruits, flowers or mushrooms.
7. Always carry a medical kit
8. Don't over exert yourself.

(Explain any three points if points are given, $\frac{1}{2}$ mark per point)

9. Need to know how to swim
10. Need to know the classification of river
11. Check all equipments
12. Ear plug
13. Life jacket

Q15. Draw a fixture of 11 Football teams participating in a Tournament on the basis of knock out. (3)

Ans. A. Total number of teams = 11
 Upper half = $n+1/2 = 11+1/2 = 6$
 Lower half = $n-1/2 = 11-1/2 = 5$
 Power of two's = 2^4 n. of teams
 $= 16-11 = 5$
 No. of Byes = 5
 No. of Byes in Lower Half = $\frac{nb+1}{2} = \frac{5+1}{2} = 3$
 No. of Byes in Upper Half = $\frac{nb-1}{2} = \frac{4-1}{2} = 2$



(If draw fixture 3 Marks, if only computation on give 2 Marks , if both 3 Marks)

Q16. How various committees are formed for Tournaments? Write brief (3)

Ans. Flow chart for committee formations – 3 Marks will be awarded, or explanation of any three committees = 3 Marks

Q.17. Sports are good for all age groups. Competitive sports are a showcase of power at the international arena. Supremacy over the other country is indirectly shown by standing at the top of medal tally. To achieve their target few countries are imparting very strict training to growing children. Over the years many organizations have raised their voice against the intensity with which training is scheduled for making an international athlete. (3)

- a. Elaborate any two physiological benefits of exercise in children.
- b. What are the disadvantages of giving high intensity training to the growing children?

Ans. A)

1. Exercise controls weight
2. Strength the bones
3. Strength the lungs
4. Promote changes in the brain structure
5. Strength the Heart
6. Boost energy level

7. Reduce blood sugar level
8. Builds strong and healthy muscles
9. Motor development
10. Helps in digestive process
11. Improves neuro muscular co-ordination
12. Help in staying healthy

(Elaborate any two from above $\frac{1}{2}$ + $\frac{1}{2}$)

B)

1. Stress/fatigue
2. Chances of overload
3. Early maturity
4. Can reach too early top form
5. Less flexibility
6. Chances of injury

(Explain any two if only points are given half Marks for each one)

Q. 18 Briefly explain different types of co-coordinative abilities.

(3)

- Ans.
- a) Orientation ability
 - b) Coupling Ability
 - c) Reaction Ability
 - d) Balance Ability
 - e) Rhythm Ability
 - f) Adaptation Ability
 - g) Differentiation Ability

(Explain any three briefly 1X 3 Marks, if any points are mentioned $\frac{1}{2}$ Marks for each point will be awarded)

Q.19 Write briefly about protein as an essential component of diet.

(3)

- Ans. Protein contains elements carbon, Hydrogen, Oxygen, Nitrogen and sulphur. Protein helps in growth and building of new cells, and repair present cells, helps in formation of protoplasm Source of protein with examples
- a) Animal sources
 - b) Plant sources

Q.20 Write in details about the physical and physiological advantages of physical exercise during the childhood stages. Explain any Five.

(5)

- Ans. The advantages are: -
- a) Prevents and reduce obesity
 - b) Develops bones
 - c) Muscle development
 - d) Prevention from diseases
 - e) Increased blood flow
 - f) Develop grace and efficiency in movement/ motor development
 - g) Strengthens the heart
 - h) Strengthens the lungs
 - i) Improves energy levels
 - j) Changes in brain structure
 - k) Reduces blood sugar level
 - l) Improves digestive system
 - m) Neuromuscular co-ordination

(If any points are given $\frac{1}{2}$ Marks for each points will be awarded)

Q.21 How the Cardiovascular fitness is measured with the help of “ Harvard Step Test ” ? Write in details about its administrative procedure. (2 +3)

Ans. After completion of administrative procedure of test the data will be put up in the formula for calculation of scores

$$\text{Fitness Index Score} = \frac{100 \times \text{test duration in seconds}}{2 \times \text{sum of heart beats in recovery periods}}$$

After above calculation fitness rating will be measured.

PROCEDURE- The Athlete stands in front of the bench or box (Height of the bench between 18” to 20”). On the command ‘Go’ the athlete step up and down on the bench or box at a rate of 30 steps per minutes (One second up and one second down) for 5 minute (150 steps). Stopwatch is also started simultaneously at the start of stepping after that the athlete sit down immediately after completion of the test ie: after 5 minutes. The total number of heart beats are counted between 1 to 1.5 minutes after completion of the last step. The heart beats are counted for 30 seconds period. Again heart beats are noted for 30 seconds after the finish of the test. After that 3rd time the heart beats are noted after 3 minutes of completion of the test for 30 seconds period. The same foot must start the step up each time and an erect posture must be assumed on the bench.

Q.22 Keeping in view of the Indian Ideology, critically analyze the sociological aspect of women Athletes in sports participation. (1X5)

Ans. Sociological Aspects : -

- a) Role of Family
- b) Role of Friends
- c) Role of School
- d) Role of Culture
- e) Prejudice of society

(If only points are given half Marks for each point)

Q.23 Participation in physical activity for a longer duration maintain functional fitness among aged population. Justify (1 X 5)

I. Ans. A.

- i. Changes in Sensory Organs
- ii. Changes in Skin
- iii. Changes in sleep
- iv. Changes in bone density
- v. Changes in Metabolism
- vi. Changes in brain and nervous system/ brain ageing
- vii. Heart and blood circulation
- viii. Change in body composition.
- ix. Slow down loss of muscle mass
- x. Reduces age related diseases
- xi. Improves muscular strength
- xii. Enhances lung capacity
- xiii. Improves flexibility
- xiv. Decreases stress and tensions

(Any five with justifications if only points are given half Marks for each given point)

Q.24 Differentiate between Intrinsic and Extrinsic motivation. Explain in detail Goal Setting and Reinforcement as technique of motivation.

(2 + 3)

Ans. A.

Intrinsic Motivation	Extrinsic Motivation
Natural Motivation and internal	Always from outside external factors
Depends upon emotional needs ,biological needs, personal needs and social needs	Rewards, prizes, social recognition,
Satisfaction, behaviour , happiness	Job, teachers, parents.
Inner Desire, force comes from inside Interest	Appreciation

B. Goals Setting 1) Short term 2) Middle term 3) Long term

- I. Goal should be made clear,
- II. Knowledge of progress, Achievable
- III. According to capabilities, Realistic
- IV. Need to set short term goal,
- V. Challenging
- VI. Goals can be reset
- VII. Grading players

Reinforcement : It is a statement which can alter the behavior in a positive manner. It is used for behavior modification.

Q.25 Write in detail about the dislocation and fractures among the bones and joints injuries. (2 ½ + 2 ½)

Ans. Fracture: Breaking of a bone / bone injury

- a) Simple or closed fracture
- b) Transverse fracture
- c) Spiral fracture
- d) Comminuted fracture
- e) Impacted fracture
- f) Green stick fracture
- g) Oblique bone fracture
- h) Complicated fracture

Dislocation: Joint injury

Injuries of Joint - Dislocation: Bones are displaced from their original position
(Lower jaw, shoulder joint, hip joint and wrist joint)

Q. 26 Differentiate mechanically between walking and running. Explain in detail mechanical analysis of walking.

(1+4)

Ans. A. Difference between walking and Running

RUNNING	WALKING
1) Double swing phase	1) Double support during walking
2) At one point of the time both feet are off ground contact to the ground (i e . float phase)	2) Atleast one part or foot remains in ground
3) Swing phase duration is longer in running	3) Stance phase duration is longer in walking
4) Linear and angular velocity of lower extremities is faster	4) Linear and angular velocity of lower is slower
5) Range of motion is greater	5) Range of motion is less

B. **Walking mechanical analysis** in details: 1) Stance phase , a) Heel strike b) Early flat foot , c) late flat foot , d) Heel rise , e) Toe off, 2) Swing phase. (Explain any four)