



বিদ্যাসাগর বিশ্ববিদ্যালয়

VIDYASAGAR UNIVERSITY

B.Sc. Honours Examination 2021

(CBCS)

4th Semester

PHYSIOLOGY

PAPER—SEC2T & SEC2P

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

THEORY : SEC2T (COMPUTER APPLICATION IN HEALTH SCIENCE)

Group - A

Answer any *one* question.

1×15

1. (a) What is computer hardware? Give some examples. What is mainframe computer?

(b) What is MS Word? What are the uses of MS Word?

(3+2+3)+(3+4)

2. (a) Explain structure of Windows.
 (b) Define free and open source software.
 (c) Write a short note on MS power point.
 (d) What are the differences between hardware and software?
 4+3+4+4
3. (a) How will you compute Mean and SD of supplied data using software?
 (b) How will you create slide in MS power point?
 (c) How will you create a pie chart in excel with percentage?
 (d) How will you use clipart, wordart, and picture in MS power point?
 4+4+4+3

Group - B

Answer any *one* question. 1×10

4. What is the significance of computer in the field of nutrition and diet? 10
5. Describe computer assisted therapy in health science. 10

PRACTICAL : SEC2P

Answer any *one* question. 1×15

1. What is an operating system (OS)? Discuss the main purpose of an OS. Write down two examples of OS. How will you enter any physiological data in MS Excel?
 4+6+2+3

2. What is physiological data? Give two examples. With some arbitrary numbers (assumed by the examinee) of A+, B+ and AB+ blood donors (total 100 donors) draw representative bar graph and pie diagram. What is the major difference between a bar graph and a pie diagram?

(3+1)+(4+4)+3

3. (a) Draw a histogram for the following frequency distribution of body height (cm) in a sample. How will you create a histogram using this data in excel?

Body height	151-155	156-160	161-165	166-170	171-175
Frequencies	28	24	30	18	37

- (b) Why t test is used?

6+5+4

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THEORY : SEC2T (PHYSIOLOGICAL TECHNIQUES AND PUBLIC HEALTH ASSESSMENTS)

Group - A

Answer any *one* question.

1×15

1. (a) What is the significance of nutritional assessment?
- (b) Define growth chart. What is the importance of BMI-for age chart?
- (c) Describe the importance of perimetry in clinical physiology.
- (d) List the factors that affect field of vision. 2+(2+2)+4+5
2. (a) Differentiate between 'wasting' and 'stunting' of growth.
- (b) Explain various methods for assessing the nutritional status of preschool children.
- (c) Write down the public health impact of obesity. 2+8+5

3. (a) Explain the importance of performing EMG in clinical physiology.

(b) Describe the types and features of motor unit potentials.

(c) How nerve conduction velocity is measured? 5+5+5

Group – B

Answer any *one* question. 1×10

4. Give a brief account of ECG with physiological significance of its different waves, complex and intervals. 10

5. Write short notes on : 5+5

(a) Deep breathing test,

(b) Somatotype for adults.

PRACTICAL : SEC2P

Answer any *one* question. 1×15

1. (a) What is colour blindness?

(b) What is the clinical significance of assessment of colour vision?

(c) Write down the principle, requirement, and procedure of Ishihara's chart methods of detecting colour vision. 2+3+(3+3+4)

2. What is the principle and procedure of Mosso's ergography to study the phenomenon of fatigue in human skeletal muscles? 5+10

3. (a) What is the principle of audiometry?

(b) How will you perform Weber's test?

- (c) Write down the principle and procedure of assessing socioeconomic status of a family. 3+4+(4+4)

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THEORY : SEC2T (HISTOPATHOLOGICAL TECHNIQUES)

Group – A

Answer any *one* question. 1×15

1. (a) What is the importance of histopathology?
 (b) Write down about the quality control in histopathology laboratory.
 (c) What are the basic requirements for a histopathology laboratory?
 (d) Give the name of a dye used in negative staining. 5+5+4+1
2. Describe the procedure for preparation of frozen sections. Discuss the types and properties of embedding media. 8+7
3. (a) What is the basic principle of ELISA?
 (b) What is autoradiography? Write down its applications.
 (c) What are the advantages and disadvantages of exfoliative cytology?
 (d) What is mordant? Give example. 3+4+4+(3+1)

Group – B

Answer any *one* question. 1×10

4. (a) Which type of abnormalities can be detected by cytogenetic techniques?
 (b) What is karyotyping? State its importance. 4+(3+3)

5. (a) What are the applications of animal tissue culture?
 (b) Write down the principle of DNA hybridization. 5+5

PRACTICAL : SEC2P

Answer any *one* question. 1×15

1. (a) What is PAP staining?
 (b) Describe the cells seen in a normal PAP stained vaginal smear.
 (c) Describe the procedure of hematoxylin and eosin staining. 4+6+5
2. (a) Describe the procedure for preparation of bone marrow smear.
 (b) How will you measure the diameter of megakaryocytes? 8+7
3. (a) What is PAS?
 (b) Discuss the principle, procedure and application of PAS staining.
 (c) Describe in detail the procedure of histological paraffin section cutting. 2+(3+4+2)+4

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**THEORY : SEC2T (SPORTS MEDICINE & NUTRITIONAL
PHYSIOLOGY)**

Group – A

Answer any *two* questions.

2×15

1. (a) What are the aims and objectives of sports medicine?
 (b) Mention the common old age problems of athletes.
 (c) Write down two weight management strategies for sports persons.
 (d) Discuss five techniques used to avoid sports injuries. 5+3+2+5

2. (a) What kind of sport injuries is termed as abrasion?
 (b) What are the main reasons for sports injury?
 (c) Explain briefly strain and sprain.
 (d) What is friction? What is its significance in the field of games and sports? 2+2+(2+2)+7

3. (a) What are the major muscles used during running?
 (b) Write a short note on tonic and phasic muscle.
 (c) Prepare a diet chart of a sports person of national level. 6+4+5

4. (a) Describe the physiological effect of diathermy.
 (b) State the treatment precautions for using the diathermies.
 (c) Discuss different forms of energies used with therapeutic modalities. 5+5+5

Group – BAnswer any *one* question.

1×10

5. (a) What is the role of various elements of diets on performance of an athlete ?
- (b) What is TENS ?
- (c) Write down the ice treatment protocol. 5+2+3
6. (a) Describe the nutritional interventions for enhancing athletic performances.
- (b) Describe the sources and functions of different micronutrients. 5+5
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