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UG/5th Sem/Physio(H)/T/19

2019

B.Sc. (Honours)

5th Semester Examination

**PHYSIOLOGY**

Paper - DSE-2T

Full Marks : 40

Time : 2 Hours

*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
in their own words as far as practicable.*

**(Environmental Physiology)**

**Group - A**

1. Answer any *five* questions from the following.

5×2=10

(a) What is biological oxygen demand ? 2

(b) Distinguish between food chain and food web. 2

[ Turn Over ]

( 2 )

- (c) What is Caisson's disease ? 2
- (d) What are the differences between sanctuary and national park ? 2
- (e) What is acoustic noise ? 2
- (f) Write the full forms of CBD and CITES. 2
- (g) Give examples of one air-borne and one water borne disease. 2
- (h) What is eutrophication ? 2

**Group - B**

2. Answer any *four* questions from the following :

4×5=20

- (a) Briefly discuss the effects of ionizing radiation on human health. 5
- (b) Give a brief note on solid waste management. 5
- (c) Briefly discuss the process of acclimatization to high altitudes with a reference to mountain sickness. 5

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- (d) Discuss the effects of noise pollution on human health. What is noise index ? 4+1
- (e) What do you mean by teratogens ? Mention the ill-effects of teratogens with reference to birth defects. 1+4
- (f) What do you mean by  $LD_{50}$  and  $ED_5$  ? Give a brief note on food additives and food adulterants. 2+3

**Group - C**

3. Answer any *one* question from the following :

1×10=10

- (a) What is ozone hole ? What are the consequences of ozone hole formations ?

What are the means of acclimatization to persistent exposure in hot environment ?

Give a brief note on primary and secondary air pollutants. (1+2)+4+3

[ Turn Over ]

( 4 )

- (b) What are the major consequences of arsenic pollution ? What is the drinking water standard for arsenic according to WHO ?

What are the major means of rain water harvesting ?

What is PAH and PCB ? Mention their importance. (3+1)+3+3

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### (Pharmacology and Toxicology)

#### Group - A

1. Answer any *five* questions from the following :

5×2=10

- (a) What is biomagnification ? 2
- (b) Differentiate between BOD and COD. 2
- (c) What is NSAID ? Give example. 2

( 5 )

- (d) Give an example of sedative and hypnotic drug each. 2
- (e) What are diuretics ? 2
- (f) Mention the concept of ecotoxicology. 2
- (g) Differentiate between agonist and antagonist. 2
- (h) Distinguish between pharmacokinetics and pharmacodynamics. 2

**Group - B**

2. Answer any *four* questions from the following :

4×5=20

- (a) Draw a dose-response curve and elaborate the curve, mentioning LD<sub>50</sub> and ED<sub>50</sub>. 5
- (b) Discuss about the characteristics of a dose-response curve. 5
- (c) Outline the mechanism of action of β-adrenergic blockers, mentioning specific examples. 5

[ Turn Over ]

( 6 )

- (d) State the cause of acid rain and describe its effects on ecosystem. 5
- (e) Classify pesticides in general and mention the molecular effects of DDT. 5
- (f) What is toxin ? Classify toxic substances. Mention the factors affecting toxicity. 1+2+2

**Group - C**

3. Answer any *one* question from the following :  
1×10=10

- (a) What is meant by xenobiotic ? State the phase I and phase II reactions of xenobiotic biotransformation in human body. 2+4+4
- (b) (i) Discuss the pharmacological function and mechanism of action of a prominent opioid analgesic.
- (ii) Define diuretics with its type. 4+4+2

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**(Sports Physiology, Work Physiology  
and Ergonomics)**

**Group - A**

1. Answer any *five* questions from the following :

5×2=10

- (a) What do you mean by "Farmer's lung" ?      2
- (b) Define 'Maximum aerobic power'.      2
- (c) State four differences between work and sports.      2
- (d) What is asbestosis ? Give one preventive measure.      1+1
- (e) What do you mean by work-rest cycle ?      2
- (f) Give examples of dietary suppliments and ergogenic aids.      2
- (g) Write any two advantage of Tread Mill exercise.      2

[ Turn Over ]

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- (h) How does anthropometry improve sports performance ? 2

**Group - B**

2. Answer any *four* questions from the following :

4×5=20

- (a) Write a short note on occupational health hazards. 5
- (b) What do you understand by sports medicine ?  
How does it improve sports performance ? 2+3
- (c) (i) What is muscle fatigue ? How it is recovered ? 1+1
- (ii) State some ill-effects of overtraining. 3
- (d) (i) What is the importance of rest pause ? 2
- (ii) How physical work capacity is measured in Harvard step test ? 3
- (e) Give a brief note on industrial safety. 5



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- (f) Give two examples of implication of ergonomics in the improvement of industrial productivity.

2+2

- (g) What is shift-work ?

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### Group - C

3. Answer any *one* question from the following :

1×10=10

- (a) (i) Briefly discuss about how the use of various ergogenic aids and supplements that improve an athlete's performance in sports arena.

- (ii) Give a brief idea about treadmill and bicycle ergometer.

5+(2½+2½)

- (b) (i) What do you mean by excess post-exercise oxygen consumption (EPOC) ?

- (ii) Discuss in brief about the cardiovascular and respiratory adjustments during graded exercise.

4+(3+3)

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[ Turn Over ]

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**(Ergonomics and Occupational health)**

**Group - A**

1. Answer any *five* questions from the following :

5×2=10

- (a) What do you mean by human-machine interaction ? 2
- (b) What is work-rest cycle ? 2
- (c) State some risk factors of work place. 2
- (d) What do you mean by static anthropometry ? 2
- (e) State some of the applications of anthropometric measurements in different working areas. 2
- (f) Mention a few measures taken to prevent accidents. 2
- (g) What is occupational injuries ? Give example. 2
- (h) What do you mean by "Farmer's lung" ? 2

**Group - B**

2. Answer any *four* questions from the following :

4×5=20

- (a) Briefly write about the human-computer interaction with an overview of control and display. Write the application of ergonomics in work efficiency. 3+2
- (b) Write a brief note on work-related musculo-skeletal disorders. 5
- (c) What do you know about employee assistance programmes ? What is occupational stress ? 3+2
- (d) Briefly discuss the effects of thermal environment in physical work environment with reference to the heat stress indices. 5
- (e) (i) What is static anthropometry ?
- (ii) Give a brief account on the user interface, mentioning its compatibility with control display. 2+3
- (f) What is occupational hearing loss ? Mention the causes of possible occupational infection that

[ Turn Over ]

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usually occur. State some preventive measures that can be adopted to avoid occupational cardiovascular toxicology. 1+2+2

### Group - C

3. Answer any *one* question from the following :

1×10=10

- (a) (i) Discuss, how the application of basic concepts of ergonomics in industrial work place help to reduce stress and physical hazards and increase productivity.
- (ii) Briefly discuss the role of a proper ergonomic design in making an interface more user friendly. 6+4
- (b) (i) Write a brief note on pneumoconiosis.
- (ii) State the consequences of occupational exposure to metals, chemicals, gases, pesticides and other toxic materials.
- (iii) Briefly discuss about the environment of industrial hygiene. 3+4+3
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UG/5th Sem/PHYSIO(H)/Pr/19

2019

B.Sc. (Honours)

5th Semester Examination

**PHYSIOLOGY**

Paper - C11-P

**Histological and Human Experiments**

Full Marks : 20

Time : 3 Hours

*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
in their own words as far as practicable.*

Answer any *one* question selecting by lucky draw.

1. Make a permanent slide with Haematoxylin and Eosin stain with supplied paraffin section of nervous tissue. Identify and write down two unique identifying characters.

(Staining - 4, Correct identification - 2, Two identifying characters - 2)

[Note : Nervous tissue (cerebrum/cerebellum/spinal cord) will be distributed to the students by the Centre examiner through lottery.]

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[ Turn Over ]

( 2 )

2. Prepare and stain corneal cell space by silver nitrate method and display it under microscope.

(Staining - 5, Display under microscope - 2) 7

3. Laboratory Note Book. 2

4. Viva-voce. 3

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