2017

PHYSIOLOGY

[Honours]

PAPER – VI

Full Marks : 90

Time : 4 hours

The figures in the right hand margin indicate marks

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

Illustrate the answers wherever necessary

[OLD SYLLABUS]

GROUP – A

Answer any **two** questions taking at least **one** question from each Subgroup :   15 ×2

Subgroup—A(a)

1. (*a*) What is $\dot{V}O_2$ max ? State the factors affecting $\dot{V}O_2$ max. Briefly discuss the methods of measurement of $\dot{V}O_2$ max.

(b) Define physical fitness. Write down the formula for assessment of PFI of an individual by modified Harvard steptest.

$$(2 + 4 + 5) + (2 + 2)$$

2. (a) What is statistics of dispersion ?

(b) Distinguish between parametric and non-parametric statistics with example.

(c) Define mean and mode.

(d) Describe different sampling methods commonly used in statistics. $3 + 6 + 2 + 4$

3. (a) Write down the principle and procedure of hemodyalysis.

(b) Discuss on basic principle and applications of ion exchange chromatography.

(c) What is SDS - PAGE ? $(4 + 3) + (4 + 2) + 2$

Subgroup—A(b)

4. (a) What is decompression sickness ? Discuss

the hyperbasic effects on physiological system during deep sea diving. What is smog ?

(b) What is population overgrowth ? Describe the physiological effects of vibration.

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

5. (a) Differentiate sterilization and pasturization.

(b) Classify bacteria on the basis of their morphology.

(c) Differentiate between bacteriostatic and bactericidal antibiotics.

(d) Describe briefly the glyoxalate cycle of bacterial metabolism. $4 + 3 + 4 + 4$

6. (a) Dicuss the pharmacological properties of antihistaminic and narcotic analgesics.

(b) Elucidate your idea about the drug biotrans-formation.

(c) Differentiate between agonist and antagonist. $(3 + 3) + 5 + (2+2)$

GROUP – B

**Answer any five questions taking at least two
questions from each Subgroup :** 8 × 5

Subgroup—B(a)

7. (*a*) What is bioenergetics ?

   (*b*) Write a short note on occupational health
   hazards.

   (*c*) What is aerobic work capacity ? 2 + 4 + 2

8. (*a*) Distinguish between 'Hardware' and
   'Software'.

   (*b*) Write down the full form of INTERNET and
   wi-fi.

   (*c*) What is skewness ? 3 + 2 + 3

9. (*a*) State the basic principle and use of flame
   photometer.

   (*b*) What is artificial pacemaker ?

   (*c*) Write the uses of endoscopy. 4 + 2 + 2

10. What do you mean by linear correlation ? Distinguish between parameter and sample. 4+4

11. (a) What is endoscopy ?

    (b) When is an artificial pacemaker required by a patient ? 3+5

Subgroup—B(b)

12. (a) Write the effects of positive and negative-G force on physiological system.

    (b) Define noise. 6+2

13. (a) Give an account of algal classification.

    (b) Explain the production of monoclonal antibodies. 4+4

14. Discuss briefly on cause and effects of air pollution. 4+4

15. (a) Mention the elementary composition of outer membrane of bacteria.

    (b) What is peptidoglycan ? Why it is important ? 4+(3+1)

(*Turn Over*)

16. Write short notes on :   4 + 4

    (*i*) Nerve gas

    (*ii*) Single cell proteins.

GROUP – C

Answer any **five** questions taking at least **two**
questions from each Subgroup :   4 × 5

Subgroup—C(a)

17. What do you mean by ergogenic aids ?   4

18. (*a*) What is EPOC ?

    (*b*) What is asbestosis ?   2 + 2

19. (*a*) What is kurtosis ?

    (*b*) What is standard error of mean ?   2 + 2

20. State your idea about cell fractionation.   4

21. (*a*) What is super computer ?

    (*b*) What is pie-diagram ?   2 + 2

Subgroup—C(b)

22. What is biomagnification ? Give example.　3 + 1

23. Briefly state the radiation hazards on physiological system.　4

24. Write a brief note on fermentation.　4

25. What do you mean by genomics and proteomico ?　4

26. Write a short note on dose-response curve.　4