This question paper contains 2 printed pages.

Your Roll No. .....

F-7

Sl. No. of Ques. Paper	**: 1430**
Unique Paper Code	**: 2581303**
Name of Paper	**: Human Physiology and Anatomy II**
Name of Course	**: B.Sc. (Hons.) Biomedical Sciences (FYUP)**
Semester	**: III**
Duration	**: 3 hours**
Maximum Marks	**: 75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt five questions in all. Question No. 1 is compulsory.
Subparts of the questions should be attempted together.
Draw illustrations or diagrams wherever necessary.

1. (a) Differentiate between:
   (i) Cortical and juxtamedullary nephrons
   (ii) Spermiogenesis and Spermatogenesis. 1·5×2=3

   (b) Define:
   (i) Capacitation
   (ii) Calcification
   (iii) End diastolic volume
   (iv) Tidal volume. 1×4=4

   (c) Explain / Give reasons / Justify:
   (i) There is no foolproof contraceptive.
   (ii) Fractures are healable.
   (iii) Lymph is the middle man of the body.
   (iv) What if there is negative feedback absent in human body. 2×4=8

   (d) Give the full forms of the following:
   (i) ACTH
   (ii) IRC
   (iii) Hb
   (iv) Cu-T. 1×4=4

2. Write short notes on:

P. T. O.

(a) Oogenesis

(b) Atherosclerosis

(c) Bronchitis

(d) Hormones of Hypothalamus.

3,4,3,4

3. (a) Draw and explain the cardiac cycle. 5

(b) Give the neurogenic control and regulation of respiration. 5

(c) What is Vasarecta and how does it help in urine formation? 4

4. (a) Give in detail the structure of a compact bone. Explain how the structure is suited for its function. 5

(b) What is Inulin? Why is clearance of Inulin a measure of GFR? Why can creatine clearance be also used to assess GFR? 4

(c) Why does cartilage heal the slowest? 2

(d) What is PCOD? How does it cause female infertility? 3

5. (a) Draw haemoglobin and O_2 dissociation curve and explain its coordinates. 5

(b) How does the Renin-Aldosterone-Angiotensin system regulate blood pressure? 4

(c) What is osteoporosis and how is it different from gout? 3

(d) A 70-kg adult patient is artificially ventilated by a machine during surgery at a rate of 20 breaths/min and a tidal volume of 250 ml/breath. Assuming a normal anatomic dead space of 150 ml, is this patient receiving an adequate alveolar ventilation? 2

6. (a) How is calcium homeostasis in blood maintained by the interplay of parathyroid and vitamin D_3? 5

(b) Give one word for:

(i) The phase of heart contraction

(ii) Condition caused due to deficiency of thyroid hormone during development

(iii) Joint between humerus and pelvic girdle

(iv) Process of voiding of urine

(v) Accumulation of fluid in extracellular spaces. 5

(c) Classify different kinds of joints. 4