

# First BHMS-2004

Please mention this subject code  
on your Section 'B' & 'C' Answer Sheets  
Subject Code : H 103

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First B.H.M.S. Examination, Oct./Nov. 2004  
(Old Course)  
PHYSIOLOGY INCLUDING BIOCHEMISTRY - I

Total Duration: Section A + B + C = 3 Hours

Section B & C Marks: 70

### SECTION - B & SECTION - C

- Instructions:**
- 1) All questions are compulsory.
  - 2) The number to the right indicates full marks.
  - 3) Draw diagrams wherever necessary.
  - 4) Answer each Section in the respective answer sheet only.
  - 5) Answers written in the inappropriate sectional answer books will not be assessed in any case.

### SECTION - B

35 Marks

2. Attempt any **three out of four** :

(5×3 = 15)

- a) Functions of blood      c) Leucopoiesis  
b) Taste buds              d) M-N system

3. Attempt any **two out of three** :

(5×2 = 10)

- a) Heart sound  
b) ABO blood group  
c) Blood volume

4. Answer the following :

(5×2 = 10)

- a) Cardial output  
b) Cynosis.

### SECTION - C

35 Marks

5. Describe in detail **chemical and nervous** regulation of respiration.

15

6. Define blood pressure. Write its regulation.

10

7. Describe the mechanism of **accommodation** in human eye.

10

OR

7. Mechanism of coagulation in detail.

10

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**MUHS OCTOBER/NOVEMBER 2004**

205 H

Name of the Examination : \_\_\_\_\_

Subject : \_\_\_\_\_ Section : A

Question Booklet Version
<b>H 209</b>

Seat No.				

Answer Sheet No.				

Date: \_\_\_\_\_

**This is to certify that, the entries of Examination, Subject, Seat No. and Answer Sheet No. have been verified.**

Candidate's Signature \_\_\_\_\_

Invigilator's Signature \_\_\_\_\_

**INSTRUCTIONS TO CANDIDATES**

- 1) This question booklet contains objective type questions.
- 2) The question paper and OCR Answer Sheet are issued separately at the start of the examination.
- 3) Candidate should carefully read the instructions printed on the question booklet and answer sheet and make correct entries on the Answer Sheet. As ANSWER SHEETS are designed to suit the OPTICAL CHARACTER READER (OCR) SYSTEM, special care should be taken to make correct entries. Special care should be taken to fill question booklet VERSION and SERIAL NO., Seat No. accurately. The correctness of entries has to be cross-checked by the invigilator. The candidate must sign on the Answer Sheet and question booklet.
- 4) During the time of examinations:
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  - b) Determine the correct answer from out of the four available options given under each question.
  - c) Cross 'X' in the correct block  below the question number in the answer sheet with Blue Ball Point Pen only. e.g.

Q. No. 13 : The product of  $0.5 \times 0.05$  is

(Question Booklet)

- (a) 0.05
- (b) 0.005
- (c) 0.025
- (d) 0.25

(Answer Sheet)

Q. No.	11	12	13	14
a	<input type="checkbox"/>	a <input type="checkbox"/>	a <input type="checkbox"/>	a <input type="checkbox"/>
b	<input type="checkbox"/>	b <input type="checkbox"/>	b <input type="checkbox"/>	b <input type="checkbox"/>
c	<input type="checkbox"/>	c <input type="checkbox"/>	c <input checked="" type="checkbox"/>	c <input type="checkbox"/>
d	<input type="checkbox"/>	d <input type="checkbox"/>	d <input type="checkbox"/>	d <input type="checkbox"/>

Thus as the correct answer is 'c' the candidate should cross the block corresponding to 'c' under Question No. 13 on the answer sheet.

- 5) Rough work should be done only on the blank space provided on the question booklet. **Rough work should not be done on the Answer Sheet.**
- 6) The Answer Sheet and the question booklet is to be returned to the invigilator immediately after the prescribed examination time is over.
- 7) **No candidate is allowed to leave the examination hall till the examination session is over.**

P.T.O.

First B.H.M.S. Examination, Oct./Nov. 2004  
(Old Course)

PHYSIOLOGY INCLUDING BIOCHEMISTRY - I

Total Duration: Section A + B + C = 3 Hours

Section A-Marks: 30

SECTION - A  
(MCQ)

Instructions: 1) Put a cross  in the appropriate box below the question number once only.  
2) Use blue ball point pen only.  
3) Each question carries one mark.  
4) Student will not be allotted mark if he/she overwrites, strikes out or puts white ink on the cross once marked.

1. <sup>Total</sup> The blood volume in a 70 kg man : (1×30 = 30)
- a) comprises about 70% of body weight  
~~b) comprises about 90% of body weight~~  
 c) volume tends to rise when fluid is lost  
 d) none of these
2. RBC formation utilises
- a) Iron c) Cobalt  
 b) Copper d) All of the above ✓
3. Polycythemia could result from excess intake of
- a) Iron b) Copper c) Cobalt d) Zinc
4. The following are present in the circulating blood EXCEPT
- a) Prothrombin b) Albumin ✓ c) Fibrinogen d) Thrombin
5. Chemical regulation of respiration is maximally affected by
- a) O<sub>2</sub> b) CO<sub>2</sub> ✓ c) Hydrogen ions d) Lactic acids
6. Kuffer cells are found in
- a) Spleen c) Mucosa of small intestine  
 b) Liver ✓ d) Gall bladder
7. Percentage of total lung capacity which cannot be emptied out is about
- a) 50 b) 46 c) 20 ✓ d) 12
8. Plasma clearance will be the lowest for
- a) Glucose b) Urea c) Uric acid ✓ d) Insulin
9. Light with longest wave length is
- a) Violet b) Red ✓ c) Blue d) Green



10. Rhodopsin is
- a) A purple pigment
  - b) Most sensitive violet light
  - c) Regenerated when the eyes are closed
  - d) Absent in the people who are blind
11. The following are elements of the vestibular organs :
- a) Maculla of urticle
  - b) Maculla of saccule
  - c) Ampulla of semicircular canal
  - d) All of the above
12. In a healthy individual usually GFR is
- a) 5 % of the effective renal blood flow
  - b) Between 15 - 20% of the effective blood flow
  - c) Between 40 - 50% of the effective blood flow
  - d) 90%
13. Active reabsorption of glucose from the filtrate occurs in
- a) Proximal tubules
  - b) Collecting ducts
  - c) Loop of Henle
  - d) Distal tubules
14. Macula densa in kidney is located in relation to
- a) P.C.T
  - b) D.C.T
  - c) Afferent arteriole
  - d) Efferent arteriole
15. In chronic Renal failure .
- a) Anaemia of iron deficiency type
  - b) Plasma  $PCO_2$  tends to be low
  - c) Serum calcium level tends to rise
  - d) All of the above
16. Under basal conditions about 70% of blood volume is found in,
- a) Aorta
  - b) Large arteries
  - c) Large veins
  - d) Capillaries
17. Which of the following is true concerning the rapid ejection phase of cardiac cycle?
- a) Mitral valve opens
  - b) Aortic pressure rising
  - c) Aortic valve is closed
  - d) 1<sup>st</sup> heart sound occurs
18. In the normal ECG, P wave is positive in
- a) Lead I and II
  - b) Lead II, III, III
  - c) Lead VI
  - d) All of the above
19. Initial thromboplastin for clotting comes from
- a) Platelets
  - b) Liver
  - c) Damaged vessel wall and surrounding tissues
  - d) Mast cells

20. Cardiac out put in man under Basal condition is an average  
a) 9.5 Lits      b) 2.5 Lits      c) 7.5 Lits      ~~d) 5 Lits~~ ✓
21. Chemo Receptor stimulation leads to  
a) Hypoventilation      ~~c) Reflex brady cardia~~ ✓  
b) Apnoea      d) Rise in BP
22. Coronary blood flow is normally controlled predominantly by -  
a) Hormones      ~~c) Auto regulation~~ ✓  
b) Sympathalic impulses      d) Para sympathalic
23. Erythropoiesis is stimulated by  
a) A rise in  $PCO_2$  in Art Blood      ~~c) When person is exposed to hypoxia~~ ✓  
b) Gastrin (IF)      d) All of the above
24. During resting condition the organ which contributes maximum to body heat and thus BMR is  
~~a) Liver~~      b) Heart      c) Brain      d) Kidney
25. The central control of micturation lies at  
a) Cortical      ~~c) Hypothalamic~~ ✓  
~~b) Brainstem and spiral~~ ✓      d) All of the above
26. Acidosis is associated with  
a) Hypoventilation      ~~c) Chronic renal failure~~ ✓  
b) Severe diarrhoea      d) All of the above
27. The blood brain barrier is impermeable to  
a) Water      ~~e)  $CO_2$~~  ✓  
b) Oxygen      d) None of the above
28. Intra ocular pressure is normally about  
~~a) 10 to 20 mm of of Hg~~ ✓      c) 20 to 30 mm of Hg  
b) 5 to 10 mm of of Hg      d) 30 to 40 n.m of Hg
29. Myopia is also called as  
a) Long sightedness      ~~c) Old sightedness~~ ✓  
~~b) Short sightedness~~ ✓      d) None of the above
30. Sources of heat loss are  
a) Conduction      ~~c) Sweating~~ ✓  
b) Convection      ~~d) All of the above~~ ✓

Please mention this subject code  
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Subject Code : H 109

**First B.H.M.S. (New Course) Examination, October/November 2004**  
**PHYSIOLOGY INCLUDING BIOCHEMISTRY - I**

Total Duration: Section A + B + C = 3 Hours

Section B & C Marks : 70

SECTION - B & SECTION - C

- Instructions:** 1) All questions are compulsory.  
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SECTION - B

2. Solve any **three** out of five : (3×5 = 15)  
a) Erythropoiesis  
b) W.B.C.  
c) Heart Sounds  
d) Platlets  
e) Blood Group
3. Solve any **two** out of four : (2×5 = 10)  
a) Lung Volume  
b) Control of Respiration  
c) Juxtra Glomerular Apparatus  
d) Formation of Urine.
4. Solve any **two** out of four : (2×5 = 10)  
a) Functions of Middle Ear  
b) Structure of Skin  
c) Regulation of Body Temperature  
d) Refractive Errors of EYE.

SECTION - C

5. Describe Cardiac Cycle in detail. (1×15 = 15)  
OR  
Composition and functions of Blood.
6. Describe parts of Nephron and formation of Urine. (1×10 = 10)  
OR  
Describe mechanism of transport of O<sub>2</sub> and CO<sub>2</sub> in blood between lung and tissue.
7. Describe EYE. (1×10 = 10)  
OR  
Internal EAR.

Name of the Examination: \_\_\_\_\_

Subject : \_\_\_\_\_

Section : A

Question Booklet Version

**H 235**

Seat No.

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Answer Sheet No.

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Date: \_\_\_\_\_

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Invigilator's Signature \_\_\_\_\_

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b	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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SECTION - A

(MCQ)

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(30 × 1 = 30)

1. Hormones secreted by kidney include
- |  |   |
|--|---|
| <input checked="" type="checkbox"/> a) Renin | <input type="checkbox"/> c) Vit D                         |
| <input type="checkbox"/> b) Erythropoietin   | <input checked="" type="checkbox"/> d) All of the above ✓ |
2. Each kidney contains how many nephrons ?
- |  |                                    |
|--|------------------------------------|
| <input checked="" type="checkbox"/> a) 10,00,000 ✓ | <input type="checkbox"/> c) 10,000 |
| <input type="checkbox"/> b) 1,00,000               | <input type="checkbox"/> d) 1,000  |
3. Daily Glomerular Filtration is
- |  |
|--|
| <input type="checkbox"/> a) 100 litre              |
| <input type="checkbox"/> b) 150 litre              |
| <input checked="" type="checkbox"/> c) 180 litre ✓ |
| <input type="checkbox"/> d) 200 litre              |
4. Macula densa is located in
- |  |  |
|--|--|
| <input type="checkbox"/> a) Proximal tubule            | <input type="checkbox"/> c) Ascending loop of Henle      |
| <input checked="" type="checkbox"/> b) Distal tubule ✓ | <input checked="" type="checkbox"/> d) Collecting duct ✓ |
5. The part of nephron highly permeable to water is
- |  |   |
|--|---|
| <input checked="" type="checkbox"/> a) Proximal tubule ✓ | <input type="checkbox"/> c) Collecting ducts  |
| <input type="checkbox"/> b) Distal tubule                | <input type="checkbox"/> d) None of the above |
6. All of the following muscles help in respiration EXCEPT
- |   |  |
|---|--|
| <input type="checkbox"/> a) Sternocleidomastoid | <input checked="" type="checkbox"/> c) Deltoid ✓ |
| <input type="checkbox"/> b) Intercostals        | <input type="checkbox"/> d) Serratus anterior    |
7. Surfactant is secreted by
- |  |   |
|--|---|
| <input checked="" type="checkbox"/> a) Type I pneumocytes ✓  | <input type="checkbox"/> c) Both of the above |
| <input checked="" type="checkbox"/> b) Type II pneumocytes ✓ | <input type="checkbox"/> d) None of the above |

- 3 ✓
8. The anatomical dead space is normally  
a) 150 ml ✓  
b) 500 ml  
c) 700 ml  
d) 950 ml
9. Normal  $O_2$  absorption at rest per minute is  
a) 250 ml ✓  
b) 350 ml  
c) 500 ml  
d) 750 ml
10. The normal quantity of respiratory units in both lungs in adult is about  
a) 100 million  
b) 200 million  
c) 300 million ✓  
d) 500 million
11. The total refractive power of eye is about  
a) 25 D ✓  
b) 37 D  
c) 59 D  
d) 93 D
12. Colour preception is a function of  
a) Rods  
b) Cones ✓  
c) Both of the above  
d) None of the above
13. The total number of cell layers in human retina is  
a) 4  
b) 6  
c) 8  
d) 10 ✓
14. Footplate of stapes covers  
a) Oval Window ✓  
b) Round Window  
c) Both of the above  
d) None of the above
15. The taste buds are present on which type of papillae?  
a) Circumvalate  
b) Fungiform  
c) Foliate  
d) All of the above ✓
16. The maximally achievable systolic pressure by Left Ventricle is  
a) 200 mm Hg  
b) 300 mm Hg ✓  
c) 400 mm Hg  
d) 500 mm Hg
17. P - R interval is said to be prolonged when it exceeds  
a) 16 Sec.  
b) 0.2 Sec. ✓  
c) 0.25 Sec.  
d) 0.3 Sec.
18. Pulse pressure is  
a) Systolic pressure + Diastolic pressure ✓  
b)  $\frac{1}{3}$  Systolic pressure + Diastolic pressure  
c)  $\frac{1}{2}$  Systolic pressure + Diastolic pressure  
d) None of the above ✓
19. Normal right arterial pressure is  
a) 5 mm of Hg  
b) 10 mm of Hg  
c) 15 mm of Hg ✓  
d) 0 mm of Hg

20. Each small square in ECG paper represents a voltage of  
 a) 1 mV  
 b) 0.1 mV ✓  
 c) 0.2 mV  
 d) 0.5 mV
21. The daily loss of iron from the body is  
 a) 1 mg ✓  
 b) 2 mg  
 c) 3 mg  
 d) 5 mg
22. The function of eosinophil is  
 a) Phagocytosis of bacteria  
 b) Killing of small parasites  
 c) Destruction of allergens  
 d) All of the above ✓
23. The T Lymphocytes are produced in  
 a) Liver  
 b) Bone marrow  
 c) Thymus  
 d) Lymph node
24. All of the following are antigens EXCEPT  
 a) Polysaccharides ✓  
 b) Proteins  
 c) Fatty acids  
 d) Lipids
25. The least frequent blood group is  
 a) AB ✓  
 b) A  
 c) B  
 d) O
26. Outermost layer of skin is  
 a) Epidermis ✓  
 b) Dermis  
 c) Both of the above  
 d) None of the above
27. The amount of melanin in skin is most dependent upon  
 a) MSH ✓  
 b) ACTH  
 c) Both of the above  
 d) None of the above
28. Function of skin  
 a) Protective function  
 b) Temperature regulation  
 c) Excretory function  
 d) All of the above ✓
29. Area of skin supplied by single nerve is called as  
 a) Dermatome ✓  
 b) Myotome  
 c) Both A & B  
 d) None of the above
30. Nails are derived from  
 a) Bone  
 b) Muscle  
 c) Fascia ✓  
 d) Skin