

Question Paper

Exam Date & Time: 13-Jan-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. RESPIRATORY THERAPY DEGREE EXAMINATION - JANUARY 2021
SUBJECT: BRES 201 - PULMONARY DIAGNOSTICS
(2016 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1) Mention any FIVE Indications of Pulmonary function testing. Write about the interpretation of pulmonary function test. (10)
(5+5 = 10 marks)
- 2) Stepwise approach for diagnosis of acid base disorder with an example. State the Henderson-Hasselbalch equation. Mention any three technical causes of abnormal results in an ABG? (10)
(5+2+3 = 10 marks)
- 3A) **Describe the following terms** (5)
i) Air bronchogram
ii) Consolidation
- 3B) Explain the process of single breath-hold technique for DLCO measurement. Mention two disease conditions each which can increase and decrease DLCO values (5)
- 3C) Distinguish between sidestream and mainstream capnography. Write notes on the different phases of a capnograph with a neat and labelled diagram. (5)
- 3D) Explain in detail the procedure for 6 minute walk test. (5)
- 4A) Draw the normal Central Venous Pressure(CVP) waveform with a special mention on significance of each wave. (2)
- 4B) Following are the results of a 47 year old female patients spirometry. Interpret the result. (2)
- | | Actual | Predicted | %Predicted |
|---------------------------|--------|-----------|------------|
| Vital Capacity(FVC) | 2.24L | 3.5L | 64% |
| Total Lung Capacity (TLC) | 3.51L | 5.4L | 65% |
| FEV1/FVC | 82% | 75% | |
- 4C) Enlist any **TWO** indications for Bronchoprovocation testing (2)
- 4D) What are the chest X-ray findings of patients with pneumonia. (2)
- 4E) Interpret the following ABG and comment on its compensation (2)
pH- 7.21, PaCO₂- 43mmHg, PaO₂- 81mmHg, HCO₃⁻- 14mEq/l.

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Question Paper

Exam Date & Time: 15-Jan-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. RESPIRATORY THERAPY DEGREE EXAMINATION - JANUARY 2021
SUBJECT: BRES 203 - PEDIATRIC RESPIRATORY CARE
(2016 SCHEME)

Marks: 50

Duration: 120 mins.

ALL questions are compulsory.
Draw neat labelled diagram wherever required.

- 1) Describe pathophysiology and management of Bronchiectasis. (10)
- 2) A 5 year old male child presents in emergency triage with severe respiratory distress. SpO₂ on room air is 90%, heart rate of 100 beats/min and respiratory rate is 60 bpm. (10)
What will be the initial management?
What are the indications for endotracheal intubation in paediatrics?
Enlist any four artificial airway devices used in paediatrics.
(4+4+2 = 10 marks)
- 3A) List FIVE stages of lung development and the gestational age at which they occur. (5)
- 3B) Describe the normal volume-time graph and flow-volume loop in spirometry. (5)
- 3C) Indications and mechanism of action of N- acetylcysteine. (5)
(2+3 = 5 marks)
- 3D) Inhaled nitric oxide therapy. (5)
- 4A) Normal values of pulmonary vascular resistance and cardiac index. (2)
- 4B) Chest radiographic feature of epiglottitis and croup. (2)
- 4C) Enlist factors affecting pulse oximetry. (2)
- 4D) Name four arterial sampling sites. (2)
- 4E) Principles of capnometry. (2)

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Question Paper

Exam Date & Time: 18-Jan-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.O.T./ B.Sc. P.F.T./ BPT/ B.Sc. M.R.T./B.Sc. RADIOTHERAPY TECHNOLOGY/ B.Sc. C.V.T./B.Sc.
R.T./B.Sc. M.I.T./B.Sc. RRT&DT/B.Sc. EMT/B.Sc. AOTT DEGREE EXAMINATION - JANUARY 2021
SUBJECT: PATH 201 - PATHOLOGY
(2016/2016 RV/2019 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

- 1A) Define leukaemia. Classify acute leukaemia. Describe the clinical features of acute leukaemia. (6)
(2+2+2 = 6 marks)
- 1B) Describe the blood picture and chromosomal abnormality of chronic myeloid leukaemia. (4)
- 2A) Compare the two major types of diabetes mellitus. (5)
- 2B) Define shock. Explain the pathogenesis of septic shock. (5)
(2+3 = 5 marks)
- 3A) Explain the vascular and cellular changes in acute inflammation. (5)
- 3B) Describe the etiology, modes of infection and clinical features of viral hepatitis. (5)
- 3C) Explain the process of fracture healing with factors influencing the healing. (5)
- 3D) Describe the types and morphology of tuberculosis. (5)

4. Write briefly on:

- 4A) Predisposing factors of atherosclerosis. (2)
- 4B) Cerebrovascular diseases. (2)
- 4C) Klinefelter's syndrome. (2)
- 4D) Carcinogenesis with suitable examples. (2)
- 4E) Clinical features of renal failure. (2)

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Question Paper

Exam Date & Time: 20-Jan-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.O.T./ B.Sc. P.F.T./BPT/ B.Sc. C.V.T./B.Sc. R.T./ B.Sc. M.I.T./B.Sc. RRT&DT/B.Sc. EMT/B.Sc. AOTT
DEGREE EXAMINATION -
JANUARY 2021
SUBJECT: MICR 201 - MICROBIOLOGY
(2016/2019 SCHEME)

Answer all the questions.
Draw diagrams wherever necessary.

Marks: 50

Duration: 120 mins.

- 1) Define and classify hypersensitivity reactions. Write in detail about type I hypersensitivity reaction. (10)
(1+2+7 = 10 marks)
- 2) Describe in detail the pathogenesis and prophylaxis of poliomyelitis. (10)
(5+5 = 10 marks)

3. Write short notes on:

- 3A) Bacterial flagella (5)
- 3B) Laboratory diagnosis of enteric fever. (5)
- 3C) Autoclave (5)
- 3D) ELISA (5)

4. Write short notes on:

- 4A) Define plasmids. Mention two properties of plasmids. (2)
- 4B) Two contributions of Robert Koch. (2)
- 4C) Two staining methods for *Mycobacterium tuberculosis*. (2)
- 4D) Draw a neat labelled diagram of trophozoite and cyst forms of *Entamoeba histolytica*. (2)
- 4E) Classify fungi according to morphology with one example each. (2)

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Question Paper

Exam Date & Time: 22-Jan-2021 (02:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

THIRD SEMESTER B.Sc. RESPIRATORY THERAPY DEGREE EXAMINATION - JANUARY 2021
SUBJECT: BRES 205 - PULMONARY DISEASES
(2016 SCHEME)

Marks: 50

Duration: 120 mins.

Answer all the questions.

1. A 53 year old male has been admitted to casualty with acute onset of breathlessness, Chest X- ray demonstrates bat wing opacities. An arterial blood gas analysis shows P/F ratio of 100, based on the above criteria, answer the following questions

- | | | |
|-----|---------------------------------------|-----|
| 1A) | What could be the possible diagnosis? | (2) |
| 1B) | List the etiology | (4) |
| 1C) | Outline the management of the disease | (4) |
-
- | | | |
|----|--|------|
| 2) | Describe the management of obstructive sleep apnea in detail | (10) |
|----|--|------|

3. Write Short Note:

- | | | |
|-----|---|-----|
| 3A) | Brief note on scoliosis | (5) |
| 3B) | Mention the clinical features and laboratory values that indicate acute ventilatory failure in Guillain Barrie Syndrome | (5) |
| 3C) | Mention the causes of exudative pleural effusion | (5) |
| 3D) | Explain the pathophysiology of Pulmonary Tuberculosis | (5) |

4. Write Very Short Notes:

- | | | |
|-----|---|-----|
| 4A) | List the radiological features of pneumothorax | (2) |
| 4B) | Define Bronchial Asthma | (2) |
| 4C) | List the types of bronchiectasis | (2) |
| 4D) | List any four symptoms of smoke inhalational injury | (2) |
| 4E) | List clinical features of croup syndrome | (2) |

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