



Assessment Tools for Written Examination

Configuration of PBQ

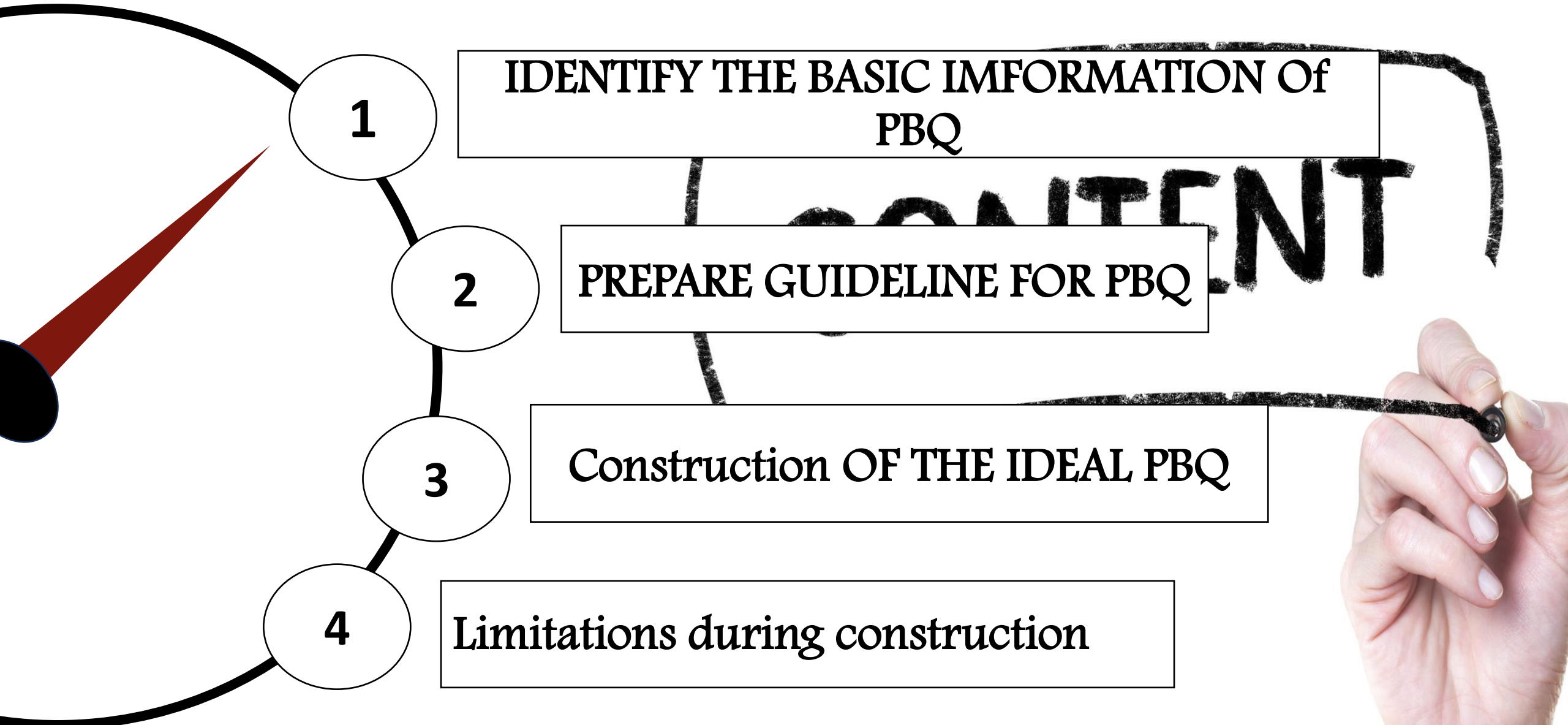
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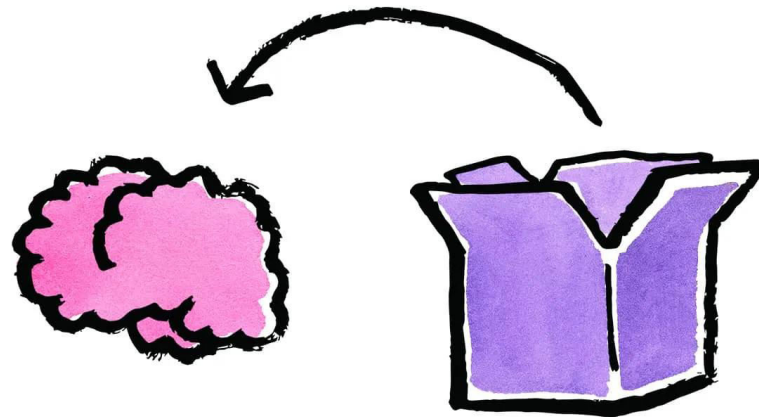
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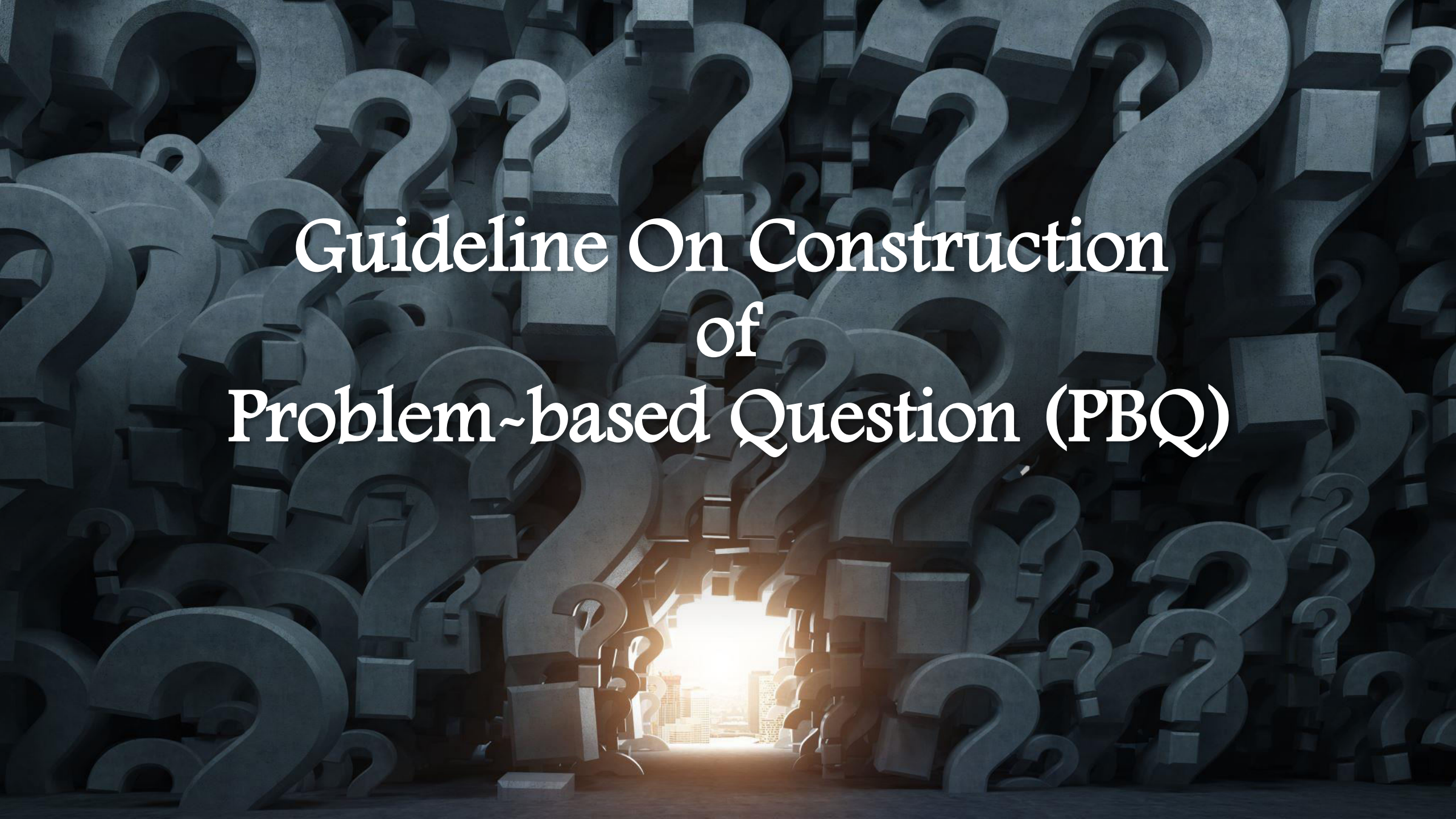
Content



Problem Based Question: Introduction

- Present *realistic clinical scenarios* to students, requiring them to apply their knowledge, critical thinking and problem-solving skills to diagnosed and manage a case.
- *Questions* are designed to mimic real-life medical scenarios and encourage students to actively learn by integrating basic and clinical sciences.





Guideline On Construction
of
Problem-based Question (PBQ)

General points to be followed



Instruction should be clear eg. *Read the scenario/ storyline and answer the following questions.*



Should be relevant to the core content of curriculum.



Must have validity, reliability, specificity and objectivity.



Encompasses common and important topics esp. *of contents from integrated teaching*

General points to be followed...contd



Answer key~ Correct and specific



Mark distribution~Justified and structured.



Checklist~ Well-constructed checklist should be available

Special Characteristics for Parts of PBQ





Scenario/ storyline: criteria

I. Characteristics of Scenario/ storyline:

- Constructed with simple, unambiguous, palatable and grammatically correct language
- Constructed in present tense excepting any previous event
- Within thirty to sixty words

I. Characteristics of Scenario/ storyline: ...Contd

- Included adequate information regarding subject and settings e.g.
 - Age
 - Gender
 - Occupation
 - Location (biochemistry lab, outdoor, indoor and emergency)

I. Characteristics of Scenario/storyline: ...Contd.

- Specific and clearly related to the questions
- Contain relevant and adequate information
- Contains the clues of the answers

I. Characteristics of Scenario/ storyline ... Contd.

- Avoid unnecessary information that can distract the examinee
- Avoid started directly with numerical information

II. Question~Characteristic Features



II. Question: Characteristic Features

- Demands taking help from the scenario
- Answer to the first asked question completely determines answer to the subsequent questions
- Should be branched & SAQ pattern, 2/3/4 in numbers

II. Question: Characteristic Features...Contd

- Valid, reliable and specific
- Should address at least two higher levels of cognitive domain:
understand, apply, analyze and evaluate

II. Question: Characteristic Features...Contd

- One question should not inquire multiple answers
- Should avoid the question that directs for recall answer

Self-Assessment



An Ideal PBQ

Q. A 20-year-old married female presents with pain in her right lower abdomen for 1 day associated with nausea

- a) Mention four (04) relevant questions you want to know from history. 1
- b) Write four (04) differential diagnosis. 1
- c) Mention three (03) investigations with reasoning 1.5

Let's Find out the Flaws

Q. A 30-year-old man has a penetrating injury in his left gluteal region due to a road traffic accident. He is unable to move his left leg below the knee. The physician notices that there is loss of all movements below the knee with foot drop, sensory loss on the back of the thigh, the whole of the leg and the foot except the area innervated by the saphenous nerve on the left leg

- a) Which nerve injury is most likely to produce this type of disability? 2
- b) Why is there a loss of movement below the knee joint? 2
- c) Why is the area innervated by the saphenous nerve spared? 1

Let's Find out the Flaws

Q. A 35-year-old lady **came** to her physician with the complaints that she had not able to put on finger rings that used to fit, and her shoe size had progressively increased. On examination, there were prominent facial features and **hunched back**.

- a) What is the underlying condition called? 1
- b) Which hormone is responsible for this condition? 1
- c) Mention three clinical features present in the face of this patient. 3

Let's Find out the Flaws

Q. A 35-year-old man presents with high fever, right-sided pleuritic chest pain and cough with rusty sputum for 6 days.

- a) Mention expected physical findings during the examination of the respiratory system. 2.5
- b) Write down the investigations for him with interpretation. 2.5

Let's Find out the Flaws

Q. A 45-year-old male patient **came** to the DMCH, medicine ward. His serum total cholesterol level is 242 mg/dl and TAG is 210 mg/dl.

- a) What is your diagnosis? 1
- b) Define and classify lipoprotein. 1
- c) Discuss the metabolism of chylomicron. 3

Let's Find out the Flaws

Q. As a public health expert, you are assigned to recommend protective measures for the workers of a Radiology Department of DMCH.

a) What protective measures will you recommend and why?

Let's Find out the Flaws

Q. A thirty-year-old woman **came** to the OPD with complaints of fever, burning sensation of micturition, urgency and frequency with lower abdominal pain for five days. She **was diagnosed** as a case of UTI.

- a) Write down the names of drugs used in UTI. 2
- b) Name the drug of choice in such case. 1
- c) Write down the mechanism of action and adverse effects of cotrimoxazole. 4

A PBQ for 1st Professional MBBS Exam

Read the scenario/ storyline and answer the following questions;

A 65-year-old man has come to OPD with the complaints of progressive yellow colorations of skin, passage of pale stool, dark urine and generalized itching.

- a) Name the clinical condition. 1
- b) Explain the biochemical basis of the above-mentioned clinical condition. 3
- c) Name two biochemical tests relevant to above mentioned scenario. 1

Answer key

a) Obstructive Jaundice

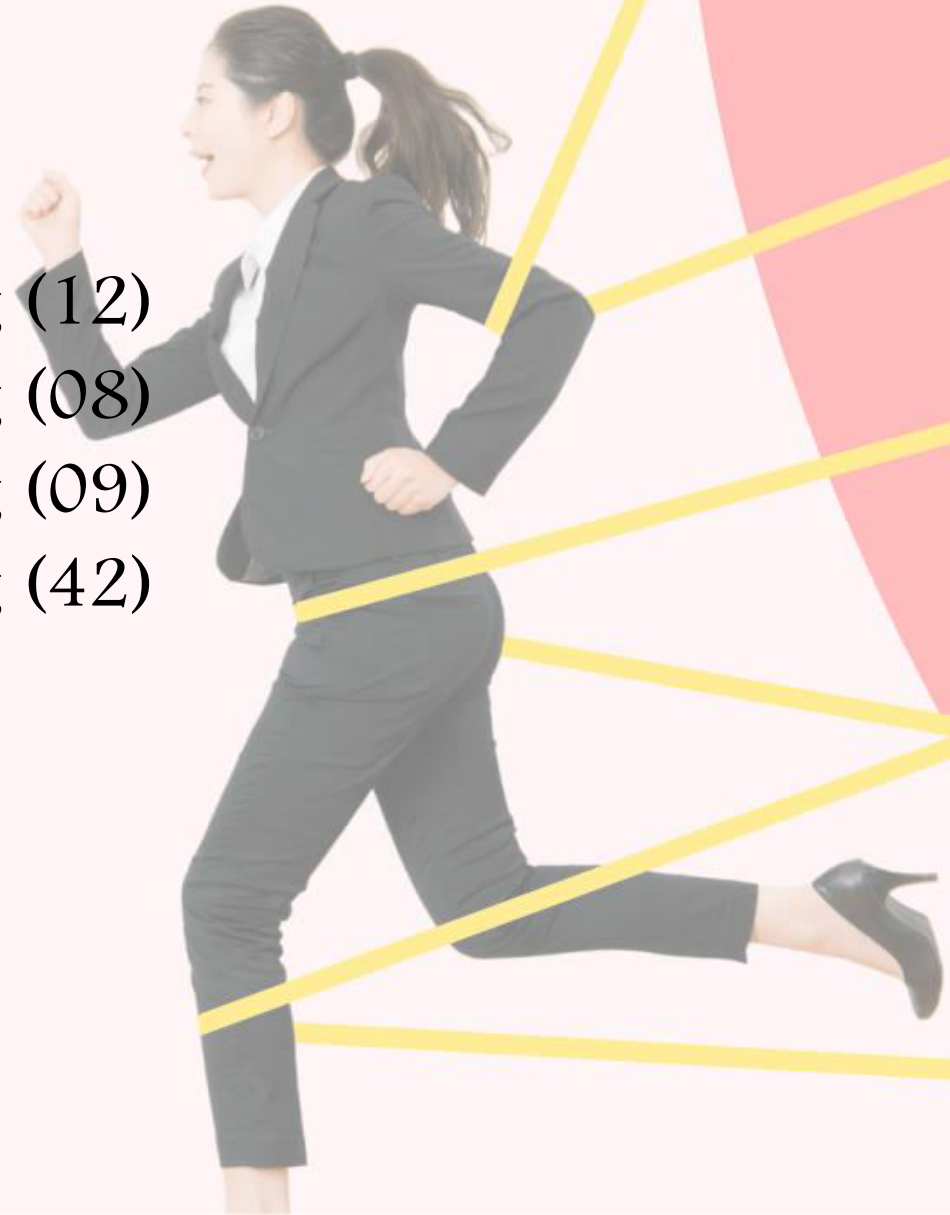
b) Obstructive jaundice occurs due to obstruction in the bile duct. So, bile cannot flow from liver to the intestine. This obstruction is usually due to gall stones or carcinoma head of the pancreas. The bilirubin which is conjugated in the liver, instead of going to the intestine, enters the circulation leads to obstructive jaundice.

c) Biochemical tests are~

1. Serum bilirubin~highly increased
2. Serum alkaline phosphatase

Limitations

- Integrated teaching
 - Phase 1~ integrated teaching (12)
 - Phase 2~ integrated teaching (08)
 - Phase 3~ integrated teaching (09)
 - Phase 4~ integrated teaching (42)
- Question Bank



Participants Reaction

- Wv³vi Wv³vi vibe Av†m |
- cÖ_g cÖ⁻œ cvi†j evKx ,†jv Answer Kiv hvq |
- me ,†jv Marker Gi normal value Rvb†Z nq- GUvB mgm^ˆv |
- gv†S gv†S Scenario confused K†i †d†j |
- †Kvb Question bank bvB |
- meB †Zv Problem based B, Avjv[`]v †Zv wKQz bvB |
- eo cÖm&&&&œ--†QvU DËi |

Take-home message

- Problem-based questions encourage students to integrate knowledge to solve complex medical problems
- Well-crafted PBQs can assess a range of cognitive skills beyond rote memorization
- But, poorly designed ones failed to encourage deeper thinking and explore a realistic clinical condition



References

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4. Concept of medical education – Tahmina Begum
5. Guideline provided – DGME
6. Online resource materials
7. Questions of previous 1st Professional Exams

REFERENCES

THANK YOU

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