

Guideline for Developing Competency Based Assessments

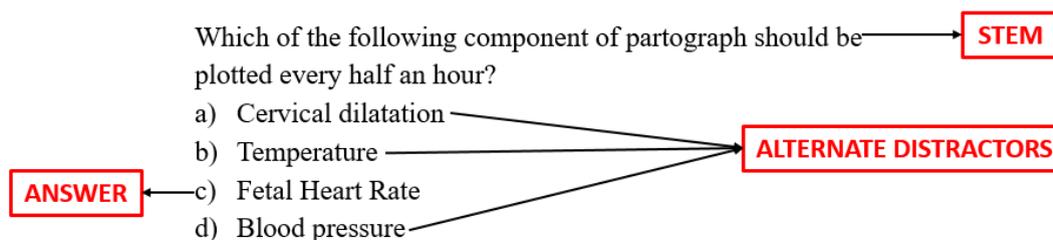
The assessment questions are crucial for determining the level of understanding of learners at every competency level. Therefore, it is essential to create an exhaustive repository of assessment questions inclusive of different levels of understanding.

Types of Assessment Questions

Multiple Choice Questions

Multiple choice questions are of **two types; single select (with only one right answer) or multi-select (multiple right answers)**. Multiple Choice Questions can be used to access various levels of learning outcomes, from basic recall to application, analysis and evaluation but is limited and not an effective method to test the student's ability to organize thoughts or articulate explanations or create ideas.

Parts of a Multiple Choice Question



Rules to remember while forming Multiple Choice Questions (Single and Multi-select)

Dos	
The question should be meaningful by itself and should present a definitive problem from the learning outcomes	Which of the following component of partograph should be plotted every half an hour? a) Cervical dilatation b) Temperature c) Fetal Heart Rate d) Blood pressure
A question should be negatively stated only when a learning outcome requires it	Following are the danger signs in case of vaginal discharge during pregnancy except a) the discharge is coloured (greenish or brownish) b) there is blood in the discharge c) discharge is clear and white and not smell bad d) there is blood in the discharge

Donts	
The question should not contain irrelevant material	<p>Partograph is the most important tool for health workers at any level to assess the progress of labour and take appropriate actions. It uses graphic recording of the progress of labor and condition of mother and fetus. Which sign is used to denote the Intact membrane?</p> <p>a) M b) I c) B d) C</p> <p>Instead the question should be</p> <p>Which sign is used to denote the Intact membrane in the partograph?</p> <p>a) M b) I c) B d) C</p>
Avoid using partial sentence in the question	<p>A fully dilated cervix has an opening of _____ cm</p> <p>a) 14 b) 10 c) 12 d) 8</p> <p>Instead the question should be</p> <p>What is the opening of a fully dilated cervix in cms?</p> <p>a) 14 b) 10 c) 12 d) 8</p>

Rules to remember while forming Multiple Choice Alternatives

Dos	
All alternatives provided should be probable/ believable to serve as alternatives.	<p>Which of the following component of partograph should be plotted every half an hour?</p> <p>a) Cervical dilatation b) Temperature c) Fetal Heart Rate d) Blood pressure</p>
Alternatives should be stated clearly and	What is PPH?

<p>concisely. Alternatives that are excessively wordy assess students reading ability rather than their learning.</p>	<p>a) Severe vaginal bleeding after childbirth. It's a serious condition that can lead to death. Other signs include dizziness, feeling faint and blurred vision. It can occur after delivery or up to 12 weeks postpartum. Early detection and prompt treatment can lead to a full recovery.</p> <p>b) A condition of high blood pressure and excess protein in the urine during pregnancy. Symptoms include upper-right abdominal pain, severe headache and vision and mental status changes. Medication can treat and prevent seizures and reduce high blood pressure.</p>
<p>Alternatives should be mutually exclusive</p>	<p>What is the normal Respiratory rate in newborns?</p> <p>a) <20 per minute b) <10 per minute c) >20 per minute d) 20 per minute</p> <p>Instead the alternatives should be</p> <p>What is the normal Respiratory rate in newborns?</p> <p>a) Below 20 per minute b) Between 21-29 per minute c) Between 30-40 per minute d) Between 41-49 per minute</p>
<p>Alternatives should be homogenous in content. If the alternatives are heterogeneous in content, it can cue students to the correct answers.</p>	<p>What is the space within the delivery room for facilitating immediate care of the newborn called?</p> <p>a) New born care Corner b) Operation theatre c) ANC Area d) Labour room</p> <p>Instead the alternatives should be</p> <p>What is the space within the delivery room for facilitating immediate care of the newborn called?</p> <p>a) New born care Corner b) Recovery area c) Examination room d) Specialized Newborn care unit</p>
<p>All alternatives should be similar in length and use similar language (either all alternatives use textbook language or none of the alternatives use textbook language). Non-uniform options may lead the test-taker to guess in case a</p>	<p>What is Gestational diabetes?</p> <p>a) Increased sugar levels b) Random blood sugar > 200 mg% c) Blood sugar with glucometer 2 hours after 75g glucose >200 mg % d) Blood sugar with glucometer 2 hours after 75g glucose \geq140 mg % anytime during pregnancy</p> <p>Instead the alternatives should be</p>

<p>few options reveal more detail than others</p>	<p>What is Gestational diabetes?</p> <ul style="list-style-type: none"> a) Blood sugar with glucometer 4 hours after 25g glucose ≥ 140 mg % anytime during pregnancy b) Blood sugar with glucometer 4 hours after 50g glucose ≥ 140 mg % anytime during pregnancy c) Blood sugar with glucometer 2 hours after 75g glucose ≥ 140 mg % anytime during pregnancy
<p>Options follow the same grammatical structure and are aligned to the question stem. If options don't follow the same grammatical structure, it encourages test takers to guess.</p>	<p>Work allocation orders (WAOs) are documents that formally:</p> <ul style="list-style-type: none"> a) Allocation of roles and accountabilities to every government official usually upon joining b) Outline the roles, activities, and competencies for every position in government c) Delineating the competencies required for every position in government <p>Instead the alternatives should be</p> <p>Work allocation orders (WAOs) are documents that formally:</p> <ul style="list-style-type: none"> a) Allocate the roles and accountabilities to every government official usually upon joining b) Outline the roles, activities, and competencies for every position in government c) Outline the competencies required for every position in government
<p>All alternatives should be presented in a logical order (alphabetical or numerical)</p>	<p>Which of the following component of partograph should be plotted every half an hour?</p> <ul style="list-style-type: none"> a) Cervical dilatation b) Temperature c) Fetal Heart Rate d) Blood pressure <p>Instead the alternatives should be</p> <p>Which of the following component of partograph should be plotted every half an hour?</p> <ul style="list-style-type: none"> a) Blood pressure b) Cervical dilatation c) Fetal Heart Rate d) Temperature
<p>Donts</p>	
<p>Avoid using Extreme options like 'all', 'always', "many", 'never', etc. 'All of the above' or "none of the above" also should be avoided as it enables guess work and make for easy elimination for the test-taker.</p>	<p>Which equipments and supplies should be always available at a newborn care corner?</p> <ul style="list-style-type: none"> a) Suction equipment b) Radiant warmer c) IV Cannula d) All of the above <p>Instead the alternatives/question should be</p>

	<p>Which equipment should be always available at a newborn care corner?</p> <p>a) Ventouse b) Radiant warmer c) Boyles trolley d) Shadowless lamp</p>
Avoid making complex multiple choice alternatives.	<p>Which of the followings are uterotonic drugs?</p> <p>a) Oxytocin b) Misoprostol c) Iron sucrose d) Both a and b e) Both b and c f) Both a and c</p>

Fill in the blanks

Fill in the blank questions are brief sentences from which one or two keywords are omitted. The learners are required to simply fill in the omitted word and complete the sentence based on their understanding of prior knowledge. They can be used to test both recall and application.

Rules to remember while forming Fill in the Blanks questions

Sentences should be clear and easy to understand	<p>The _____, abbreviated as GST is a _____ tax. The _____ Act was passed by the parliament in _____. It is levied on the _____ of goods and services.</p> <p>Instead the question should be</p> <p>The GST Council has fixed the threshold limit for exemption of tax to be _____.</p>
No more than two blanks should be included within the sentence	<p>The _____, abbreviated as GST is a _____ tax. The _____ Act was passed by the parliament in _____. It is levied on the _____ of goods and services.</p> <p>Instead the question can be broken into 3 separate questions</p> <ol style="list-style-type: none"> 1. The _____ Tax is abbreviated as GST. 2. GST is an _____ tax. It is levied on the _____ of goods and services. 3. The _____ Act was passed by the parliament in ___ for introducing GST.
The stem has a single correct answer	<p>_____ is a uterotonic drug</p> <p>There are multiple answers to this. Instead the question should be</p>

	Oxytocin is a _____ drug
The length of the blanks should be uniform to avoid guessing	The largest state of India is _____ while the smallest state is ____. Instead the question should be The largest state of India is _____ while the smallest state is _____.
Only keywords should be omitted	Oxytocin is a uterotonic _____. Drug is not the keyword in this sentence. Instead the question should be Oxytocin is a _____ drug

For MCQ alternatives provided with fill in the blanks, follow the same instructions provided under “Things to remember while forming Multiple Choice Alternatives”.

Match the following

Match the following is a type of question that requires matching a series of stems or premises to responses or principles. They are often presented as a column of stems to be matched with a column of responses. Such questions allow assessors to assess multiple facts from a topic at once. Match the following questions are useful when you want to test the learner’s ability to remember facts and identify or establish a relationship between two objects or terms. The assessment can become even more beneficial when facts are interrelated and test takers are required to remember them together.

Rules to remember while forming Match the following Questions

Items should be short and crisp	<table border="1"> <tr> <td>1. Mercury</td> <td>A. Hottest planet in our solar system revolving around the sun</td> </tr> <tr> <td>2. Venus</td> <td>A. Closest planet to the sun in the solar system</td> </tr> <tr> <td>3. Jupiter</td> <td>B. Largest planet in our solar system revolving around the sun</td> </tr> </table>	1. Mercury	A. Hottest planet in our solar system revolving around the sun	2. Venus	A. Closest planet to the sun in the solar system	3. Jupiter	B. Largest planet in our solar system revolving around the sun
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The sentences on the right data set can be shortened.							
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The two sets of data to be matched should be homogeneous within their respective sets

1. Mercury	A. Venus
2. Hottest planet	A. Closest planet to the sun
3. Jupiter	B. Largest planet

Instead the MTF would be

1. Mercury	A. Hottest planet
2. Venus	A. Closest planet to the sun
3. Jupiter	B. Largest planet

The items in the sets should be presented in a logical order (alphabetical or numerical)

Match the planets in the solar system to their respective diameters:

1. Venus	A. 12104 km
2. Mercury	A. 6792 km
3. Mars	B. 4879 km
4. Earth	C. 12756 km

Instead the MTF would be

Match the planets in the solar system to their respective diameters:

1. Mercury	A. 4879 km
2. Venus	A. 6792 km
3. Earth	B. 12104 km
4. Mars	C. 12756 km

The basis of matching items should be specified in the instructions

5. Mercury	D. 4879 km
6. Venus	E. 6792 km
7. Earth	F. 12104 km
8. Mars	G. 12756 km

Instead the MTF would be

Match the planets in the solar system to their respective diameters:

1. Mercury	a) 4879 km
2. Venus	b) 6792 km
3. Earth	c) 12104 km
4. Mars	d) 12756 km

<p>The items should be matched in one way only</p>	<p>Match the planets with their respective features:</p> <table border="1"> <tr> <td>1. Mercury</td> <td>A. Revolves around the sun</td> </tr> <tr> <td>2. Venus</td> <td>A. Is made of gas</td> </tr> <tr> <td>3. Earth</td> <td>B. Has moons orbiting it</td> </tr> <tr> <td>4. Mars</td> <td>C. Is the hottest planet</td> </tr> </table> <p>Instead the MTF should be</p> <p>Match the planets in the solar system to their respective diameters:</p> <table border="1"> <tr> <td>5. Mercury</td> <td>e) 4879 km</td> </tr> <tr> <td>6. Venus</td> <td>f) 6792 km</td> </tr> <tr> <td>7. Earth</td> <td>g) 12104 km</td> </tr> <tr> <td>8. Mars</td> <td>h) 12756 km</td> </tr> </table>	1. Mercury	A. Revolves around the sun	2. Venus	A. Is made of gas	3. Earth	B. Has moons orbiting it	4. Mars	C. Is the hottest planet	5. Mercury	e) 4879 km	6. Venus	f) 6792 km	7. Earth	g) 12104 km	8. Mars	h) 12756 km
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<p>Both data sets should be numbered/ alphabetized using different numbering</p>	<p>Match the the planets in the solar system to their respective diameters:</p> <table border="1"> <tr> <td>1. Mercury</td> <td>1. 4879 km</td> </tr> <tr> <td>2. Venus</td> <td>2. 6792 km</td> </tr> <tr> <td>3. Earth</td> <td>3. 12104 km</td> </tr> <tr> <td>4. Mars</td> <td>4. 12756 km</td> </tr> </table> <p>Instead the MTF should be</p> <p>Match the planets with their respective features:</p> <table border="1"> <tr> <td>1. Mercury</td> <td>a) Revolves around the sun</td> </tr> <tr> <td>2. Venus</td> <td>b) Is made of gas</td> </tr> <tr> <td>3. Earth</td> <td>c) Has moons orbiting it</td> </tr> <tr> <td>4. Mars</td> <td>d) Is the hottest planet</td> </tr> </table>	1. Mercury	1. 4879 km	2. Venus	2. 6792 km	3. Earth	3. 12104 km	4. Mars	4. 12756 km	1. Mercury	a) Revolves around the sun	2. Venus	b) Is made of gas	3. Earth	c) Has moons orbiting it	4. Mars	d) Is the hottest planet
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For MCQ alternatives provided with Match the following, follow the same instructions provided under “Things to remember while forming Multiple Choice Alternatives”.

Case studies and long/essay questions

Case studies involve the application of theories and concepts learnt to the case study. They normally assess the critical thinking of a test taker. There are mainly two types of case studies; MCQ based and Subjective short answers.

Rules to remember while making MCQ based case studies

1. Always write **in third person** (peoples name, he/she/they, “the case manager”, “the client”, etc).
2. Some case studies might require test takers to answer in the first person “I/my, etc”.
3. The case study should **not be more than 30-50 words**.
4. The case study should always **start with baseline information** provided of the client/patient like age, sex, symptoms, test results, etc.
5. After providing baseline information, the case study should **reach the first clinical decision point**.
6. There should be **enough information provided in the baseline information** for test takers to make a decision.
7. For MCQ alternatives provided with Case studies, follow the same instructions provided under “Things to remember while forming Multiple Choice Alternatives”.

Example: A woman attends the labour room for the first time. She states that she is approximately 4 months pregnant. The first day of her last menstrual period was 3rd January 2022. What will be her EDD?

- a) 10th October
- b) 12th October
- c) 25th October
- d) 28th October

Answer: 10th October

Subjective short answer case studies and Long/Essay

Subjective short answer case studies and Long/Essay answers require multi-logical thinking. **Multi-logical thinking is thinking that requires knowledge of more than one fact to logically and systematically apply concepts to a clinical problem.** Multi-logical questions require test takers to know more than one concept. Subject short answer case studies and long/essay questions are an effective method to test the student’s ability to organize thoughts or articulate explanations or create ideas.

Rules to remember for Subject short answer case studies

1. Always write **in third person** (peoples name, he/she/they, “the case manager”, “the client”, etc).
2. Some case studies might require test takers to answer in the first person “I/my, etc”.
3. The Case study **should not be more than 80-100 words**
4. The case study should always **start with baseline information** provided of the client/patient like age, sex, symptoms, test results, etc.
5. After providing baseline information, **the case study should reach the first clinical decision point. After that based on more information decision points should follow.**
6. In these case studies, **multiple clinical decision points** should be available
7. **Questions should include the explanation of a concept or the reasoning** for the answer provided by the test taker.

Example: Meena, a 22 year old resident of a village in West Bengal, migrated to the city to work as a daily wage labourer at a construction site. She is 6 months pregnant with her third child. All her previous deliveries were at home and she has not attended an Antenatal Clinic even once. She developed slight bleeding one day. It was painless and she did not think of

visiting a doctor because she would have missed a days worth of wages. A month later, she developed severe bleeding and fainted. She died before she could be taken to the hospital

1. What type of delay was present in this scenario?
2. Discuss what factors are most likely to lead to this delay.
3. Identify at least 3 strategies or activities that target the factors you identified and might help reduce the delay.

Rules to remember for long/essay questions

1. Long/essay questions should always be a **combination of 2-3 different concepts** coming together.
2. The question should be **clear and concise**.
3. **Avoid misleading questions** and ensure the question is straightforward.
4. **Avoid using any new terms or language**. All wording used in your questions should be familiar to your students to avoid confusion.
5. The question should **include memory triggers or recognizable language** to help students jog their memory.
6. Using **open-ended questions** will allow students to provide more context with their answers and aid in the evaluation process.
7. Give students an opening to explain by writing “Please explain” after the question.

Example: What is a fracture? Briefly explain the types of fractures and their signs and symptoms. Explain the first aid given to the patient before taking them to the hospital?

Forming questions for GNM Competency Dictionary

Every competency in the GNM Competency dictionary will have all the types of questions mentioned earlier in the note. Mapping of questions for each competency will be on the following basis:

Level	Type of question	Number of Questions
Level 1	MCQ- Single select	3
	MCQ- Multi-select	3
	Fill in the blanks	2
	Match the following	2
Level 2	MCQ- Single select	3
	MCQ- Multi-select	3
	Fill in the blanks	2
	Match the following	2
Level 3	Case study - MCQ	5
Level 4	Case Study- subjective	5
Level 5	Long/essay questions	5

For every Competency 35 questions will be formed and mapped to every level in the competency. Competencies with only 3 levels will have questions only till level 3 as mentioned in the table above.

Submitting Assessment Questions

UPTSU will share a format for forming Assessment Questions. Some FAQs for filling the Assessment Question format are provided below:

How to make Competency Question Code?

<Competency code><Competency level><type of question code><question number>

Example: **C1L3C1Q2**

What is “Competency code”?

Every competency has a unique competency code for it. It is provided in the GNM Competency Dictionary. No two competencies will have the same Competency code.

What is “type of question code”?

Type of question	Type of Question Code
MCQ- Single select	A1
MCQ- Multi-select	A2
Fill in the blanks	B1
Match the following	C1
Case study - MCQ	D1
Case Study- subjective	D2
Long/essay questions	E1
True-False Questions	F1
Short Questions	G1

What is “question number”?

It refers to the number of the question in the type of assessment questions. Example, if you have to make 3 MCQ-single select questions, the question 2 or MCQ-Single select will be Q2 likewise, question 2 of Match the following will also be Q2.

Timelines

Assessment questions for at least 3 competencies (105 questions) needs to be shared on the email id competencydev2022@gmail.com by each participant by 26th August 2022.

The remaining competencies need to be submitted by 2nd September on the email id competencydev2022@gmail.com by each participant.