# Activity Based Continuous Assessment System (ABCAs) Guidelines

The Activity-Based Continuous Assessment System (ABCAs) is an innovative evaluation approach that emphasizes practical learning, critical thinking, and problem-solving abilities over traditional exams. ABCAs ensures continuous learning and skill development by providing regular feedback and tracking student progress throughout the semester. This method enhances conceptual understanding, problem-solving abilities, and engagement, making education more interactive and industry-oriented. By aligning assessments with practical applications, ABCAs prepares students for authentic challenges, fosters creativity, and promotes lifelong learning in a dynamic academic environment.

**Activity planned:**

Any **one activity** from group 1 & 2 both.

**List of activities:**

### Group 1 (10 Marks Each)

1) Poster Presentation.
2) Framing Questions.
3) Open Book Test/Exam.
4) Model Presentation.
5) Technical Discussion.
6) Dry Run.

### Group 2 (10 Marks Each)

1) Market Survey.
2) Case Study.
3) Innovative idea of Techno-product.
4) Research Activity / Review Paper Writing.
5) Coding/Debugging.

## 1: Poster Presentation:

**Objective:** The primary purpose of a poster presentation is to convey the message or content in a concise and effective manner.

Posters will be judged based on both their content and presentation. They should be concise, capable of effectively communicating the message, attracting attention, and provoking curiosity.

Before creating and presenting a poster, the presenter should ask themselves essential questions to ensure clarity and effectiveness.

a) What are your objectives?

b) What message(s) do you want to convey, and

c) Who is your audience?

### 1.1: Evaluation Pattern:

| | |
|---|---|
| 1) Concept | -2 Mark |
| 2) Knowledge of the topic | -2 Marks |
| 3) Presentation of Topic | -2 Marks |
| 4) Idea conversion | -2 Marks |
| 5) Creativity and Visual Appeal | -2 Marks |

## 2. Framing Question (To be framed by the students):-

**Objective:** To develop the skill of framing questions from the studied content so that students gain a thorough understanding of the subject.

Questionnaire construction by students involves designing a questionnaire to assess their practical understanding of the subject and stimulate curiosity.

### 2.1. Attribute of Framing Questions

(i) Learning of important skills and content.

(ii) The questions compel students to think.

(iii)The questions should create interest and passion in students.

(iv)The question should not be stereotypical.

(v) The question should lead to further questions.

(vi) Questions should be inter-linked.

(vii) Students should be able to relate the questions to their daily life examples.

(viii) Question should be concise.

(ix) Questions should encourage discussion and critical thinking.

(x) Questions should be structured to assess both conceptual understanding and application.

### 2.2 Evaluation

| | |
|---|---|
| (i) If satisfies any two attribute | -2 Marks |
| (ii) If satisfies any four attribute | -4 Marks |
| (iii) If Satisfies any six attribute | -6 Marks |
| (iv) If Satisfies any eight attribute | -8 Marks |
| (v) If Satisfies any ten attribute | -10 Marks |

## 3. Open Book Examination ( To be conducted by faculty Member)

**Objective:**

**To assess students' critical thinking, interpretation, and presentation skills.**

An **open-book exam** is a test that allows students to bring reference and text materials into the examination hall. At first, this may seem like an easy test where you simply look up the answers on exam day. However, this is not the case. In fact, open-book exams can be quite challenging, as they require an in-depth understanding of the material, critical thinking, proper interpretation, and the ability to present answers effectively.

### 3.1 Guidelines for Framing Open-Book Questions (To Be Developed by the Faculty Member)

| | |
|---|---|
| i) | Question paper should be relevant & unique. |
| ii) | Question should not be from solved examples of any book / internet source. |
| iii) | Question should not be from questions solved in class or given in tutorial sheet. |
| iv) | Question should apply knowledge gained during conduction of class. |
| v) | Question should be application based. |
| vi) | Question should not be straight forward. |
| vii) | Questions if set from unsolved questions given at end of every chapter in books.30 % maximum from books mention in RGPV Syllabus can be referred. |

### 3.2 Evaluation

**Assessment of the answers should be based on the following attributes.**

(i) Understand and apply the concepts to the situational problems.          (2 Mark)

(ii) Suggest and bring out appropriate solutions to the problem/situation.   (2 Marks)

(iii) Come up with innovative opinions/suggestions.                          (2 Marks)

(iv) Conduct a deep analysis based on a wide range of perspectives.          (2 Marks)

(v) Justify answers with logical reasoning and relevant examples.            (2 Marks)

## 5. Technical Discussion:

**Objective: The primary objective of a technical discussion is to develop critical thinking, problem-solving, and analytical skills while exploring a technical subject in depth. It helps participants understand complex concepts, evaluate multiple perspectives, and arrive at well-informed conclusions through logical reasoning and evidence-based arguments.**

A technical discussion is a structured exchange of ideas, insights, and problem-solving approaches related to a specific technical topic. It involves analyzing concepts, debating solutions, and exchanging expert knowledge to enhance understanding and innovation. Technical discussions are widely conducted in academia, research, industries, and professional settings **to** facilitate collaborative learning, decision-making, and advancements in various fields such as engineering, computer science, medicine, and business analytics.

### 5.1 Evaluation

| | |
|---|---|
| (i) Depth of Knowledge | (2 Marks) |
| (ii) Logical Reasoning and Analysis | (2 Marks) |
| (iii) Communication and Presentation Skills | (2 Marks) |
| (iv) Use of Technical Evidence | (2 Marks) |
| (v) Creativity and Innovation | (2 Marks) |

## 6. Dry Run:

**Objective: The primary objective of a dry run is to test, analyze, and refine a process before actual implementation. It allows participants to detect errors, inefficiencies, and inconsistencies while ensuring that the planned system or task operates as expected.**

A dry run is a preliminary test or practice session conducted before the actual execution of a process, system, or event. It helps identify potential issues, ensure smooth operation, and verify correctness without real-time risks. Dry runs are widely used in software development, project management, engineering, education, event planning, and various technical fields to enhance accuracy and efficiency.

### 6.1 Steps to Conduct an Effective Dry Run

(i) Define the Objectives – Clearly outline what the dry run aims to achieve.
(ii) Prepare a Test Plan – Identify the components to be tested and the expected outcomes.
(iii) Simulate the Process – Execute the steps manually or using a controlled test environment.
(iv) Monitor and Record Observations – Identify issues, inefficiencies, or deviations from expected results.
(v) Analyze and Optimize – Make necessary modifications and improvements.
(vi) Re-run if Needed – Conduct multiple dry runs to ensure reliability before actual implementation.
(vii) Finalize for Execution – Confirm that the process is ready for real-world execution.

### 6.2 Evaluation

| | |
|---|---|
| (i) Error Identification | (2 Marks) |
| (ii) Process Efficiency | (2 Marks) |
| (iii) Accuracy of Simulation | (2 Marks) |
| (iv) Readiness for Implementation | (2 Marks) |
| (v) Feedback and Improvement | (2 Marks) |

## GROUP- II

1. **Market Survey**

**Objective:**

**An investigation into the state of the market for a particular product or service, including an analysis of consumers' needs and preferences.**

A market survey is a systematic process of collecting, analyzing, and interpreting data related to a specific market, industry, or customer segment. It helps businesses, researchers, and policymakers understand market trends, customer preferences, and competitive landscapes to make informed decisions. Market surveys are widely used in business strategy, product development, consumer research, and economic analysis to assess demand, pricing, and market potential.

### 1.1 Steps to Conduct an Effective Market Survey

1. **Define the Objective** – Clearly state what information is needed and why.
2. **Identify the Target Audience** – Determine the specific group of people whose opinions are relevant.
3. **Select the Survey Method** – Choose between online surveys, face-to-face interviews, phone calls, or focus groups.
4. **Design the Questionnaire** – Prepare concise and relevant questions to collect accurate data.
5. **Collect Data** – Execute the survey and gather responses from participants.
6. **Analyze and Interpret Data** – Use statistical tools to identify patterns and insights.
7. **Make Data-Driven Decisions** – Apply the findings to improve business strategies, marketing, or product development.

### 1.2 Evaluation Criteria for Market Survey

Market surveys are generally assessed based on:

1. **Relevance and Clarity of Objectives**    2 (Marks)
2. **Quality of Data Collected**    2 (Marks)
3. **Survey Design and Methodology**    2 (Marks)
4. **Depth of Analysis**    2 (Marks)
5. **Applicability of Findings**    2 (Marks)

## 2. Case Study:

## Objective:

To study the existing system along with their advantages & disadvantageous. To understand industrial needs and to suggest further improvements in systems/ process/ product features or design.

A **case study** is a detailed investigation of a real-life situation, problem, or event to explore and analyze its complexities, causes, and solutions. It is widely used in academics, research, business, healthcare, engineering, and law to understand practical applications of theoretical concepts. Case studies provide in-depth insights, critical thinking opportunities, and problem-solving strategies by examining real-world examples.

### 2.1 Steps to Conduct an Effective Case Study

1. **Select a Relevant Case** – Choose a case that aligns with the study's objectives.
2. **Research and Gather Data** – Collect information from primary and secondary sources like reports, interviews, and observations.
3. **Define the Problem Statement** – Clearly outline the issue or subject being analyzed.
4. **Analyze Key Factors** – Examine the causes, impacts, and influencing elements.
5. **Evaluate Possible Solutions** – Assess different approaches and their effectiveness.
6. **Draw Conclusions and Recommendations** – Summarize findings and suggest future actions.
7. **Present the Case Study** – Document it in a structured format with clear arguments and evidence.

### Evaluation Criteria for Case Study

Case studies are generally assessed based on:

1. **Clarity of Problem Definition**  (2 Marks)
2. **Depth of Research**  (2 Marks)
3. **Logical Analysis**  (2 Marks)
4. **Quality of Solutions and Recommendations**  (2 Marks)
5. **Presentation and Organization**  (2 Marks)

### 3. Invoative idea of Techno Product

**Objective:To submit the idea about any new product or value /feature addition in any existing product.**

An innovative idea of a techno product refers to the conceptualization and development of a unique, technology-driven solution that addresses a specific problem, enhances user experience, or improves efficiency in various domains. It involves creative thinking, technological advancements, and market viability analysis to introduce a product that stands out in the competitive landscape. Such innovations can emerge from emerging technologies, research breakthroughs, or real-world challenges across industries like healthcare, artificial intelligence, smart devices, automation, and green technology.

### 3.1 Steps to Develop an Innovative Techno Product

1. **Identify a Problem or Market Need** – Analyze gaps in existing technologies and consumer demands.
2. **Brainstorm and Conceptualize** – Generate multiple ideas and refine them based on feasibility.
3. **Research & Feasibility Study** – Conduct a market survey and technical analysis to assess the product's viability.
4. **Develop a Prototype** – Build a working model to test functionality and design.
5. **Test & Iterate** – Collect feedback from users and refine the product based on testing results.
6. **Launch & Market the Product** – Implement a business strategy to introduce the product to the target audience.
7. **Ensure Continuous Innovation** – Upgrade and enhance the product based on technological advancements and user feedback.

### 3.2 Evaluation Criteria for Innovative Techno Product

An innovative techno product is generally assessed based on:

1. **Originality & Uniqueness** (2 Marks)
2. **Technical Feasibility** (2 Marks)
3. **Market Demand & Viability** (2 Marks)
4. **User Experience & Convenience** (2 Marks)
5. **Scalability & Future Scope** (2 Marks)
6. **Sustainability & Environmental Impact** (2 Marks)

## 4. Research Activity/ Review paper writing/ original simulation based paper writing

**Objective: The primary objective of research activity is to explore, discover, and develop new insights or innovations that can contribute to academic, scientific, or industrial progress.**

A research activity is a systematic process of investigating, analyzing, and generating new knowledge to solve real-world problems, validate theories, or improve existing methodologies. It involves critical thinking, data collection, experimentation, and logical reasoning to derive meaningful conclusions. Research activities are conducted in various domains, including science, engineering, healthcare, social sciences, and business, contributing to technological advancements and academic growth.

### 4.1 Steps to Conduct an Effective Research Activity

1. **Identify the Research Problem** – Define the key issue or question to be investigated.
2. **Conduct a Literature Review** – Analyze existing studies to understand the research gap.
3. **Formulate Research Objectives and Hypothesis** – Establish clear goals and expectations.
4. **Select the Research Methodology** – Choose qualitative, quantitative, or mixed research methods.
5. **Collect and Analyze Data** – Gather information through surveys, experiments, or simulations.
6. **Interpret Findings** – Draw conclusions based on data analysis and statistical methods.
7. **Validate and Publish Results** – Ensure reliability and share findings through research papers, conferences, or patents.

### 4.3 Evaluation

1. **Originality and Novelty**          (2 Marks)
2. **Relevance and Significance.**        (2 Marks)
3. **Methodological Rigor.**             (2 Marks)
4. **Data Quality and Analysis.**         (2 Marks)
5. **Clarity and Presentation.**          (2 Marks)

## 5. Coding/Debugging.

**Objective: To enhance the skill of technical programming and simulation in the students.**

Coding and Debugging are fundamental aspects of software development that involve writing, testing, and refining code to ensure optimal functionality. Coding refers to the process of translating a problem statement into a programming language to create a working software application. Debugging, on the other hand, is the process of identifying and fixing errors (bugs) in the code to ensure the program runs correctly. Both activities are essential for building reliable, efficient, and scalable software solutions.
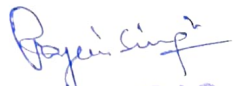
### 5.1 Steps to Perform Coding & Debugging Effectively

1. **Understand the Problem Statement** – Clearly define the problem before writing the code.
2. **Design an Algorithm/Pseudocode** – Plan the solution before coding.
3. **Write Clean & Structured Code** – Follow best practices, including proper indentation and comments.
4. **Compile & Execute** – Check for syntax and logical errors during execution.
5. **Identify & Debug Errors** – Use debugging tools and techniques to fix issues.
6. **Test for Edge Cases** – Run the program with various inputs, including boundary values.
7. **Optimize the Code** – Improve efficiency, readability, and maintainability.
8. **Final Testing & Deployment** – Ensure the code is ready for real-world implementation.

### 5.2 Evaluation Criteria for Coding & Debugging

Coding and debugging are generally assessed based on:

1. **Code Accuracy & Correctness**          (2 Marks)
2. **Efficiency & Optimization**          (2 Marks)
3. **Error Identification & Fixing**          (2 Marks)
4. **Code Readability & Documentation**          (2 Marks)
5. **Logical Flow & Structure**          (2 Marks)

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