INTERVIEW QUESTIONS

01. Q. Which type of tablets are exempted from Disintegration testing?
A. Chewable Tablets

02. Q.What are the common variables in the manufacturing of tablets?
A. Particle size of the drug substance
- Bulk density of drug substance/excipients
- Powder load in granulator
- Amount & concentration of binder
- Mixer speed & mixing timings
- Granulation moisture content
- Milling conditions
- Lubricant blending times
- Tablet hardness
- Coating solution spray rate

03. Q. Whether bracketing & validation concept can be applied in process validation?
A.Both Matrixing & Bracketing's can be applied in validation studies.
Matrixing
Different strength of same product
Different size of same equipment
Bracketting - Evaluating extremes
Largest and smallest fill volumes
Fastest and slowest operating speeds

04. Q. What is the difference between calibration and Validation?
A. Calibration is a demonstration that, a particular
Instrument or device produces results with in specified limits by comparisons with those produced by a reference or traceable standard over an appropriate range of measurements. Where as Validation is a documented program that provides high degree of assurance that a specific process, method or system consistently produces a result meeting pre-determined acceptance criteria.

05. Q. WHAT ARE GOOD MANUFACTURING PRACTICES (GMP)?
A. Good Manufacturing Practices are a set of regulations, codes, and guidelines for the manufacture of: Drug substances and drug products, Medical devices, In vivo and in vitro diagnostic products, Foods
The term "cGMP" is used by the federal government as current good manufacturing practices. By definition, "cGMP" indicates that the current GMP - which is "state of the art" - can change. "GMP" and "cGMP" are often used interchangeably and essentially they have the same meaning.

06. Q. WHO ENFORCES GOOD MANUFACTURING PRACTICES (GMP)?
A. Good Manufacturing Practices are enforced in the United States by the FDA (Food and Drug Administration)
Good Manufacturing Practices are enforced in the United Kingdom by the Medicines and Healthcare Products Regulatory Agency (MHRA)

Good Manufacturing Practices are enforced in Australia by the Therapeutical Goods Administration (TGA)
Good Manufacturing Practices are enforced in India by the Ministry of Health, multinational and/or foreign enterprises and those individuals in the following positions:
Each of the inspectorates carry out routine GMP inspections to ensure that drug products are produced safely and correctly.

07.Q.LIST OUT THE APPEARANCE DEFECTS OF TABLES DURING COMPRESSION ACTIVITY ?

Capping:- 'Capping' is the term used, when the upper or lower segment of the tablet separates horizontally, either partially or completely from the main body of a tablet and comes off as a cap, during ejection from the tablet press, or during subsequent handling.
Laminating:- 'Lamination' is the separation of a tablet into two or more distinct horizontal layers.
Sticking/filming: ' Sticking' refers to the tablet material adhering to the die wall. Filming is a slow form of sticking and is largely due to excess moisture in the granulation
Cracking:- Small fine cracks observed on the upper and lower center surface of the tablets, or very rarely on the side wall are referred to as cracks.
Chipping:- ' Chipping' is defined as the breaking of tablet edges, while the tablet leaves the press or during subsequent handling and coating operation.
Mottling:' Mottling' is the term used to describe an unequal distribution of colour on a tablet.
Double Impression: ' Double impression' involves only those punches,which have a monogram or other engraving on them.

8. Q What is the standard number of rotations used for friability test?
A. 100 rotations

9. Q What is the fall height of the tablets in the friabilator during friability testing?
A. 6 inches.Tablets falls from 6 inches height in each turn within the apparatus.

10. Q Which capsule is bigger in size - size '0' or size '1'?
A. '0' size

Difference-Out of specification and Out of Trend

Out of specification

- OOS is the comparison of one result versus a predetermined specification criteria.
- OOS investigations focus on determining the truth about that one value.

Out of Trend

- OOT is the comparison of many historical data values versus time.
- OOT investigations focus on understanding non-random changes.

Eg:
The specification limit of an impurity is : Not More than 0.1%,

Case-1: For a particular batch, the result obtained 0.11% ----This result is out of the specification limit. This is called OOS. Investigation is required. Fish bone diagram is used for OOS investigation. After identification of the root cause, corrective and preventive measures to be taken.
Case-2: The result obtained 0.08%. Although the results is well within the specifications, we should compare the result with the previous batches trend. If we found the average value of the trend as 0.05%, then this batch result (0.05%) is called out of trend.
After identifying the root cause, we can approve the batch.
OOT to be dealt on case-by-case approach. We need to have an understanding and control on the process.

Issuance of Batch Manufacturing Record (by Quality Assurance)

- Based on Production planning, production manager shall decide on the product and the number of batches to be produced in the month.
- Production supervisor shall raise the requisition for the batches to be taken for the week and forward it to Quality Assurance.
- On receipt of Batch Manufacturing Record issue requisition QA personnel will verify the details entered in the requisition form.
- A photocopy of the MASTER COPY of the required Product Batch Manufacturing Record will be taken.
- All the pages of the photocopied sheet of Product Batch Manufacturing Record shall be signed and dated by QA Personnel.
- Check for the correctness of the Batch number by verifying the BMR register.
- Enter the details of Date, Product, Batch No, Batch size, Manufacturing Date, Expiry Date and issued by details in the BMR register.
- Check and allot expiry date by referring to master list of product shelf life.
- If there is a deviation for change in batch size or any other equipment / process change raise deviation approval form as per deviation procedure SOP.
- Enter the Batch No. on all the pages of the BMR and get it authorized by QA Manager or in absence by QA Executive or QA Officer.
- Insert the signed Batch record in a BMR cover and enter the details of product name, Batch Number, Batch size. Manufacturing date and Expiry date.
- Batch record along with the Batch Record register shall be sent to production, the production person receiving the batch record should sign on the batch record register to acknowledge the receipt of batch record.
- QA person who has issued Batch Record shall sign the “issued by” on batch record issue requisition sheet and file the same for future reference.

Sampling of Raw Material

Procedure :
On receiving the requisition of the raw material from the store. The QC Chemist will draw the sample from store with proper safety. If sample is in tanker from outside factory gate.
☐Sample will be done by the chemist with equipment such as
☐If the sample is in crystal form & powder form the sample will be taken by SS sample tube.
☐If the sample is in liquid form then sample will be taken by glass sample tube.
☐If the sample is in tanker the chemist will take the sample from the each compartment of the tanker of

the bottom. And top of the each compartment with the help of glass sample tube.
☐Amount of the sample to be drawn.
☐If the sample is in solid form (like crystal or powder) then 50.0 Gms of the sample to be withdraw.
☐If the sample is in liquid form then 250.0ml of the sample to be withdraw.
☐Sample to be taken from each batch or lot as per the package label. If the package are less than 10. The sample should be drawn from each & every package is more than 10. Then sample should be taken as per this rule $\sqrt{n} + 1$.
☐We after drawing the sample chemist will put the label of UNDER TESTING on the package or drums from where sample has been taken.
☐Chemist will bring the sample to QC lab and test the sample as per SOP of testing method.
☐If the sample is approved as per SOP then sample will be approved QC Manager and test report will be sent to store incharge and production incharge and chemist will put the approved label on the package of the new material and remove the under test label.
☐If the sample is not passed as per SOP testing method. The QC Manager will reject the raw material and sent the report to the store incharge and plant in- charge, after that QC Chemist will put the REJECT label on the package or drum and remove the UNDERTESITNG label.
☐here n = Number of package

QUALITY AUDIT

What is Quality Audit ?

A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements, and whether these arrangements are implemented effectively and are suitable to achieve objectives.
Quality Audit consists of an examination and an evaluation of all or part of a system of quality assurance. It must be carried out by a specialist or a team designated for this purpose. It may be extended, as necessary, to suppliers and sub-contractors.

Basic Types :

1.Imposed upon manufacturer or supplier
- a. Regulatory
- b. Customer, or potential customer
- c. Third party (on behalf of customer)

2. Performed by manufacturer
- a. Internal (i.e., self-inspection)
  - i. Overall
  - ii. Departmental
  - iii. Product-orientated
  - iv. System-orientated
- b. External, e.g.:
  - i. Of supplier
  - ii. Of contract manufacturer
  - iii. Of contract packager
  - iv. Of contract warehouse/distributor

Reasons for Quality Auditing :

1. Internal — in order to:

- Determine the level of compliance
- Build confidence (hopefully) in GMP and the QA system
- Build interdepartmental trust, understanding, and communication (if the audit is done properly and tactfully)
- Determine measures necessary to improve, e.g.,: Premises, equipment, environment,Operations, actions, procedures,Personnel/training
- Provide a stimulus for improvement
- Recommend corrective action
- Monitor improvement

2. External — in order to:

- Establish and monitor capability of supplier or contractor to deliver goods and services that are fit for purpose (and on time, and in the quantity required)
- Build mutual confidence
- Promote understanding and communication between the parties involved (both sides can learn!)
- And in general, as listed for "internal"

Steps to Perform Audit :

1. Plan and prepare
2. Arrange and announce
3. Arrive at site of audit, meet, explain purpose
4. Perform audit
5. Informal oral report of finding
6. Formal report, with recommendations
7. Follow-up

Vendor Qualification / approval

Vendors of raw materials and packaging materials shall be categorized as below:

☐ **Critical Vendors.**

☐ All vendors who supply active raw materials, inactive raw materials, printed packaging materials, primary packaging materials are classified as critical vendors.

☐ **Non-critical Vendors.**

☐ Suppliers of materials, which do not have direct / impact on product quality. These vendors shall be classified as non-critical vendor and approval shall be based on routine compliances to the specifications.

☐ Ask the vendor to submit samples of three consecutive batches of the material for testing.

☐ Ask the vendor to fill and submit vendor / contract registration form for official record.

☐ Ask quality control department, to carry out testing and report the analytical findings to the material department.

☐ On satisfactory conformance with the specification, material department sends the supplier a questionnaire to the vendor in order to get aware of his systems and mode of working.

☐ Prepare a cross-functional audit that makes a visit to the vendor's facility on a predetermined date and evaluate his facility.

☐ Teams prepare a vendor audit report with additional information like, GMP, WHO etc. certification and send to QA department.
☐ Upon receipt of the filled questionnaire, QA analyzes it and marks off the vendor to the approved vendor list upon satisfaction.
☐ The vendor certificate of analysis should contain, name and address of vendor, date of manufacturing and or retest / expiry date of the batch, test results along with specification, and authorized signature.
☐ The processing of new vendor of recipient should be critically monitored. Any adverse observation during the period of stability study shall be brought to notice immediately to production department, purchase department and quality assurance.

Vendors are evaluated as per followings:

☐ The vendors are evaluated on the basis of quality of material and timely supply.
☐ Prepare evaluation report as a part of the trend analysis.
☐ In case any critical non-conformance observed during the periodical evaluation of vendor, which has an adverse effect of the quality of product, seizing the vendor in inventory system shall stop further procurement.
☐ Revalidation of the vendor to be performed in case of adverse effect (e.g. material failure) or after every two years for critical vendors on regular basis.

Released Of Finished Products

1.0 Purpose : To provide instruction for released of finished products.

2.0 Objective : To provide a documented procedure for released of finished products.

3.0 Scope : This procedure is applicable for released of finished products.

4.0 Responsibility :

☐ Primary: Officer – QA / Officer-Store
☐ Secondary: Officer – QA Manager.

5.0 Procedure :

☐ On completion of Batch Manufacturing activity, Batch Manufacturing Record will be handed over to QA personnel by production personnel with all attachments.
☐ Review the Batch Manufacturing Record by checking the following points:

☐ Product Name
☐ Batch Number
☐ Manufacturing Date
☐ Expiry Date
☐ Manufacturing License Number
☐ Raw Material requisition and issue details
☐ Filled contents and their legibility
☐ Cleaning record at all stages of manufacturing
☐ Test requests issued to QC
☐ QC release against issued test requests
☐ IPQC & IPQA reports
☐ Environment control & results of water used in manufacturing process.
☐ Packing material details
☐ Balance calibration record

- ☐ Weighing record
- ☐ Final product certificate of analysis
- ☐ Yield reconciliation
- ☐ Deviations (or any other discrepancies) and its Justification
- ☐ Reconciliation and yields
- ☐ Signature of all Authorized persons.
  - ☐ If all the above points are satisfied, fill the history sheet of the batch manufacturing record.
  - ☐ Enter the observation of above points in to the batch manufacturing record.
  - ☐ Reviews the QC reports by checking the following points:
- ☐ Product Name
- ☐ Batch Number
- ☐ Manufacturing Dated
- ☐ Expiry Date
- ☐ Pack size
- ☐ Compliance of test results
- ☐ Calculation in work-sheets
- ☐ System related data sheets like graphs/ chromatograms etc.
- ☐ Signature of all authorized persons.
  - ☐ QA personnel places all reports related to one batch together like, Batch Manufacturing record, COA and worksheet in a folder
  - ☐ When intimation comes from stores to dispatch the goods, QA personnel must confirm that the demanded finished goods, meets the requirement of order.
  - ☐ If finished goods meet the requirements, QA personnel inform to store department for dispatching the material.

6.0 Reference Document : Not applicable

7.0 Abbreviations :

- ☐ QA = Quality Assurance department
- ☐ SOP = Standard Operating Procedure
- ☐ QC = Quality Control

8.0 Copies to Distribution Sites :

- ☐ QA
- ☐ QC

AR No.

Analytical report numbering

1.0 Purpose : To provide an instruction for analytical report numbering procedure (AR No.)

2.0 Objective : To provide a documented procedure for analytical report numbering.

3.0 Scope : This procedure is applicable for analytical report numbering in QC department .

4.0 Responsibility :

- ☐ Primary : QC Chemist / QC-Officer
- ☐ Secondary : Overall: QC-Officer

5.0 Procedure:

- ☐ **Analytical Report Numbering for Raw Material**

- Numbering of analytical report of raw material shall be in the form of R-XXX/YY/ZZ

For Raw material: R-XXX/YY/ZZ(e.g. R-001/09/09)

Where, R = raw material

XXX = serial no. (e.g. 001, 002,)

YY =month.

ZZ = year (e.g. 2009 as 09)

- **Analytical Report Numbering for Packing Material**
- Numbering of analytical report of packing material shall be in the form of P-XXX/YY/ZZ.

For Packing material: P-XXX/YY/ZZ (e.g. P-001/08/09)

Where, P = packing material

XXX = serial no. (e.g. 001, 002…)

YY = month. (e.g.01,02..)

ZZ = year (e.g. 2009 as 09)

- **Analytical Report Numbering for Intermediate**
- Numbering of analytical report of intermediate shall be in the form of I-WWW/XXX/YY/ZZ.

For Intermediate: I- WWW/XXX/YY/ZZ (e.g. I-001/001/01/09)

Where, I = Intermediate

WWW = product code (001, 002, ….)

XXX = serial no. (e.g. 001, 002, ….)

Y Y = month. (e.g.01,02..)

ZZ = year (e.g. 2009 as 09)

- **Analytical Report Numbering for Finished Product**
- Numbering of analytical report of finished product shall be in the form of XXX or WWW or WW//XXX/YY/ZZ

For Finished product: WWW or WW/XXX/YY/ZZ (e.g. MBZ/001/01/09)

Where, WWW or WW = Short name of product (001, 002, ….)

XXX = serial no. (e.g. 001, 002, ….)

YY = month (e.g.01,02..)

ZZ = year (e.g. 2009 as 09)

- **Analytical Report Numbering for Re-testing Raw Material**
- Numbering of analytical report of re-test raw material shall be in the form of R-XXX/ZZ/R1.

For re-test Raw material: R-XXX/ZZ/R1 (e.g. R-001/09/R1)

Where, R = raw material

XXX = serial no. (e.g. 001, 002, ….)

ZZ = year (e.g. 2009 as 09)

R1 = re-test first time (e.g. R1, R2, ….)

- **Analytical Report Numbering for Re-testing Intermediate**

I- WWW/XXX /ZZ/I1

For Intermediate: I- WWW/XXX/ZZ/I1 (e.g. I-001/001/09/I1)

Where, I = intermediate

WWW = product code (001, 002, ….)
XXX = serial no. (e.g. 001, 002, ….)
ZZ = year (e.g. 2009as 09)
I1 = re-test first time (e.g. I1, I2, ….)