



Collegedunia NCERT Solutions

Step-by-step solutions, alternate methods & exam tips for Class 12 Business Studies

Chapter 2: Principles of Management

About this Chapter

NCERT Solutions for Class 12 Business Studies Chapter 2 Principles of Management cover Fayol's 14 principles, Taylor's 4 principles of scientific management, the techniques of scientific work study, functional foremanship, the differential piece rate system, and the Bhasin Limited case. Each answer follows the CBSE 2026-27 marker template: name the principle, define it, explain it in context, then map it back to the case.

Topics covered: Fayol's 14 principles • Taylor's 4 principles of scientific management • Time & Motion Study • Functional Foremanship • Mental Revolution • Differential Piece Rate • Bhasin case

Quick Formula Sheet

Fayol's 14:

Division of Work, Authority & Responsibility, Discipline, Unity of Command, Unity of Direction, Subordination of Individual Interest, Remuneration, Centralisation, Scalar Chain, Order, Equity, Stability, Initiative, Esprit de Corps.

Taylor's 4 Principles:

Science not Rule of Thumb • Harmony not Discord • Cooperation not Individualism • Development of each person.

Taylor's Techniques:

Functional Foremanship • Standardisation • Method Study • Motion Study • Time Study • Fatigue Study • Differential Piece Rate.

Also see for this chapter: [Revision Notes](#) | [Handwritten Notes](#)

Very Short Answer Type Questions

Q 2.1 What makes principles of management flexible?

SOLUTION

Concept used. **Flexibility** is a defining feature of management principles. Unlike the laws of physics, management principles are not rigid; they can be modified by the manager to suit the situation, the people, the size of the organisation and the environment.

Step 1. Principles are general guidelines, not strict rules. They tell the manager what to

do but leave the how to the manager's judgement.

Step 2. Principles are tested in different contexts and adapted; for example, “unity of command” is enforced strictly in a small firm but moderated in a matrix structure.

Final Answer: Principles of management are flexible because they are general guidelines that can be modified by the manager to suit the situation, organisation and environment.

📌 Flexibility vs Universality

Flexibility means modifiable by the manager. Universality means applicable to all organisations. Two different features.

EXPERT'S SOLUTION : Aditya Sharma, MBA, IIM Bangalore

Quick reading. The keyword the marker wants is “general guidelines”, not laws. Use that phrase verbatim.

Step 1. Define: principles are general guidelines, not rigid rules.

Step 2. Imply flexibility: the manager applies judgement based on context.

Step 3. Contrast with physical sciences: physics laws are fixed; management principles are fluid, modifiable, situational.

Final Answer: Flexibility comes from the principles being general guidelines, applied with the manager's judgement based on the situation.

Q 2.2 State the main objective of time study.

SOLUTION

Concept used. **Time study** is a technique developed by F.W. Taylor that determines the standard time taken by an average worker to do a defined task using standard methods. Its main objective is to fix a fair day's work and set a benchmark for evaluating worker performance.

Step 1. Define time study: scientific measurement of the time required to perform a task using a stopwatch.

Step 2. State the objective: to fix a fair day's work (the standard time) and use it as a

benchmark for wages and performance.

Final Answer: The main objective of time study is to determine the standard time required by an average worker to complete a task, which is then used to fix a fair day's work.

EXPERT'S SOLUTION : Vikram Joshi, B.Com (H), Shri Ram College of Commerce

Strategic angle. The examiner wants the phrase "fair day's work". Drop it into the answer.

Step 1. State the technique: time study uses a stopwatch to measure task duration.

Step 2. State the objective: to fix the standard time, i.e. fair day's work.

Step 3. State the use: as a basis for the differential piece-rate wage system.

Final Answer: To determine the standard time (fair day's work) for performing a task.

Q 2.3 Name the principle that is an extension of the 'harmony, not discord'.

SOLUTION

Concept used. Taylor's principle of **Harmony, not Discord** requires that management and workers should be in complete harmony, with mutual cooperation and a shared understanding of organisational goals. The principle that extends this idea is **Cooperation, not Individualism**: it builds on harmony by demanding active cooperation between management and workers rather than each party pursuing its own interest.

Step 1. Identify the original principle: Harmony, not Discord.

Step 2. Identify the extension: Cooperation, not Individualism, which goes one step further by requiring active, joint effort rather than just absence of conflict.

Final Answer: The principle of "Cooperation, not Individualism" is the extension of "Harmony, not Discord".

EXPERT'S SOLUTION : Ravi Bansal, M.Com, Delhi School of Economics

Quick reading. The two principles work as a pair: harmony first (no conflict), then cooperation (active joint effort).

Step 1. Harmony, not Discord: management and labour are not in conflict.

Step 2. Cooperation, not Individualism: they actively work together, sharing profits and risks.

Step 3. Hence cooperation extends harmony from “no conflict” to “joint effort”.

Final Answer: Cooperation, not Individualism.

Q 2.4 State any two causes of fatigue that may create hindrance in the employee's performance.

SOLUTION

Concept used. Taylor's **Fatigue Study** identifies the causes of physical and mental tiredness that reduce worker efficiency. Common causes include long working hours, unsuitable working conditions, repetitive monotonous work, excessive workload and inadequate rest periods.

Step 1. Long working hours without adequate rest reduce a worker's concentration and productivity.

Step 2. Excessive workload: doing too many tasks in too little time fatigues both body and mind, raising the error rate.

Final Answer: (i) Long working hours without rest; (ii) excessive workload.

EXPERT'S SOLUTION : Megha Kapoor, MBA, FMS Delhi

Quick reading. “Any two” means pick the two with the cleanest one-line definitions.

Step 1. Long working hours without rest periods: reduce mental concentration.

Step 2. Poor working conditions (lighting, ventilation, noise): increase physical tiredness.

Step 3. Memorise a third (excessive workload, monotony) as insurance.

Why this matters. Fatigue Study is one of Taylor's lesser-known techniques but a regular 1-mark VSA question. Memorise three causes.

Final Answer: (i) Long working hours; (ii) poor working conditions.

Q 2.5 SanakLal and Gagan started their career in Wales Limited (a printing press) after going through a rigorous recruitment process. Since they had no prior work experience, the firm decided to give them one year to prove themselves. Name the principle of management followed by Wales Limited.

SOLUTION

Concept used. Fayol's principle of **Stability of Personnel** states that employees should be retained in the organisation long enough to learn the job and contribute their best. Frequent turnover is costly. Giving new joiners one year to prove themselves is the textbook application of this principle.

Step 1. Identify the cue: "one year to prove themselves" implies job security for new joiners.

Step 2. Map to principle: Stability of Personnel (also called Stability of Tenure of Personnel).

Step 3. Explain briefly: it reduces turnover cost, builds loyalty, and lets workers reach their peak productivity.

Final Answer: Wales Limited is following the principle of Stability of Personnel (Stability of Tenure of Personnel).

EXPERT'S SOLUTION : *Karan Mehta, MBA, IIM Calcutta*

Strategic angle. Whenever the case shows job security or a probation period that promises retention, the answer is Stability of Personnel.

Step 1. Identify the cue: probation/job-security clause.

Step 2. Map: Stability of Personnel.

Step 3. Defend: turnover is costly; stable employees are more efficient.

Final Answer: Stability of Personnel.

Q 2.6 Which technique is used by Taylor for distinguishing efficient and inefficient

workers?

SOLUTION

Concept used. Taylor's **Differential Piece Rate System** rewards efficient workers at a higher rate per unit and pays inefficient workers at a lower rate per unit. It is the wage incentive system that distinguishes between the two groups financially.

Step 1. Define: under the differential piece rate, workers who meet or exceed the standard are paid at a higher rate per unit; workers who fall short are paid at a lower rate.

Step 2. Explain how it distinguishes: efficient workers earn substantially more, creating a clear financial gap that flags inefficient performance.

Final Answer: The Differential Piece Rate System.

EXPERT'S SOLUTION : Anjali Sinha, FCA, ICAI

Quick reading. "Distinguish efficient from inefficient" is the standard cue for the differential piece rate system.

Step 1. Name: Differential Piece Rate System.

Step 2. Definition: two-tier wage rate; higher for those who meet the standard, lower for those below.

Step 3. Purpose: financial incentive + clear identification of inefficient workers.

Final Answer: Differential Piece Rate System.

Short Answer Type Questions

Q 2.7 How is the Principle of 'Unity of Command' useful to management? Explain briefly.

SOLUTION

Concept used. Fayol's principle of **Unity of Command** states that each subordinate should receive orders from one and only one superior. The purpose is to avoid confusion, conflict of orders and divided loyalty.

Step 1. Define: one boss for one subordinate at any given time.

- Step 2.** Usefulness 1, **avoids confusion:** a worker who receives orders from only one superior knows exactly what to do and how.
- Step 3.** Usefulness 2, **clear accountability:** the single boss is accountable for the worker's performance.
- Step 4.** Usefulness 3, **no overlapping authority:** prevents two managers issuing contradictory instructions for the same task.
- Step 5.** Usefulness 4, **better discipline and morale:** workers are not torn between competing superiors; loyalty is unified.

Final Answer: Unity of Command means one subordinate, one boss. It avoids confusion, ensures clear accountability, prevents overlapping authority and improves discipline and morale.

Unity of Command vs Unity of Direction

Unity of Command: one boss per subordinate. Unity of Direction: one head and one plan for a group of activities with the same objective. Two different principles.

EXPERT'S SOLUTION : *Pranav Iyer, MBA, IIM Lucknow*

Strategic angle. List four uses with one line each; the marker counts named benefits.

- Step 1.** Avoids confusion among workers.
- Step 2.** Establishes clear accountability up the chain.
- Step 3.** Prevents overlapping orders and contradictory authority.
- Step 4.** Improves discipline and worker morale via unified loyalty.

Final Answer: One boss per subordinate, avoiding confusion, fixing accountability, preventing overlap, and improving morale.

Q 2.8 Define scientific management. State any three of its principles.

SOLUTION

Concept used. **Scientific Management**, developed by F.W. Taylor, is the application of scientific methods (observation, measurement, analysis, experimentation) to the management of work to maximise efficiency. Taylor proposed four core principles.

Step 1. Definition. Scientific management is “the substitution of scientific methods of analysis and observation for the rule of thumb at every step of business operations”.

Step 2. Principle 1: Science, not Rule of Thumb. Replace traditional/intuitive methods with a scientifically tested “one best way”.

Step 3. Principle 2: Harmony, not Discord. Management and workers should share goals, with mutual respect, not conflict.

Step 4. Principle 3: Cooperation, not Individualism. Management and workers must actively cooperate, sharing the gains of higher productivity.

Final Answer: Scientific management is the application of scientific methods to management. Three principles: Science not Rule of Thumb, Harmony not Discord, Cooperation not Individualism.

♥ Why This Matters

The fourth principle is “Development of each person to his greatest efficiency”. Memorise all four because the question often becomes “state all four” in a 4-mark variant.

EXPERT'S SOLUTION : *Suhana Verma, MBA, XLRI Jamshedpur*

Quick reading. Mark the definition, then three named principles with a one-line explanation each.

Step 1. Definition: scientific methods replace rule of thumb in management.

Step 2. Science not Rule of Thumb: one best way, scientifically determined.

Step 3. Harmony not Discord: management and labour share goals.

Step 4. Cooperation not Individualism: active joint effort, profit sharing.

Final Answer: Scientific management = science-based methods in management. Three principles: Science not Rule of Thumb, Harmony not Discord, Cooperation not Individualism.

Q 2.9 If an organisation does not provide the right place for physical and human resources in an organisation, which principle is violated? What are the consequences of it?

SOLUTION

Concept used. Fayol's principle of **Order** states that there should be a place for everything and everyone, and everything and everyone should be in its allotted place. Physical resources need material order; human resources need social order. Violation produces inefficiency and confusion.

Step 1. Name the principle: Order.

Step 2. Define: "A place for everything and everything in its place"; for people, "a place for everyone and everyone in his place".

Step 3. Consequences of violation:

- **Wastage of time and effort** hunting for misplaced materials.
- **Confusion among workers** as no one knows who reports where.
- **Higher costs** due to lost or damaged materials.
- **Reduced efficiency** and slower production.
- **Low morale** because workers feel they are working in chaos.

Final Answer: The principle of Order is violated. Consequences: wastage, confusion, higher costs, lower efficiency and poor morale.

EXPERT'S SOLUTION : Aakash Pillai, MBA, NMIMS Mumbai

Picture-first. Imagine a warehouse where boxes are scattered and workers wander looking for tools. That is what violation of Order looks like.

Step 1. Principle: Order (both material and social).

Step 2. Definition: "A place for everything and everything in its place".

Step 3. Consequences: wastage of time, materials, money; rising errors; falling morale.

Final Answer: Principle of Order is violated; consequences are wastage of resources, confusion and inefficiency.

Q 2.10 Explain any four points regarding significance of principles of management.

SOLUTION

Concept used. The **significance** of management principles refers to the practical benefits managers and organisations gain by following them. NCERT lists six benefits;

any four are acceptable.

Step 1. Provides useful insights to managers. Principles explain why and how to manage; they save time by codifying experience.

Step 2. Optimum utilisation of resources and effective administration. Principles guide the use of men, money, machines and methods so that waste is minimised.

Step 3. Scientific decisions. Principles encourage decisions based on logic and analysis rather than guesswork or personal bias.

Step 4. Meeting changing environment requirements. Principles are flexible; managers can adapt them to deal with technology change, globalisation and competition.

Final Answer: Four points: (i) provides useful insights, (ii) optimum resource utilisation, (iii) scientific decisions, (iv) meeting changing environment.

EXPERT'S SOLUTION : *Devansh Roy, MBA, MDI Gurgaon*

Strategic angle. List four benefits, named, one line each. NCERT's full list also includes "fulfilling social responsibility" and "management training, education and research".

Step 1. Useful insights to managers (codified experience).

Step 2. Optimum utilisation of resources, efficient administration.

Step 3. Scientific decisions over rule of thumb.

Step 4. Adaptation to changing environment via flexibility.

Final Answer: Insights to managers, optimum utilisation, scientific decisions, flexibility for change.

Q 2.11 Explain the principle of 'Scalar Chain' and gang plank.

SOLUTION

Concept used. Fayol's principle of **Scalar Chain** requires that there should be a clear line of authority from the topmost manager to the lowest worker. Communication should flow along this chain. The **gang plank** is an exception that allows two employees at the same level in different departments to communicate directly with each other in an emergency, bypassing the chain to save time.

Step 1. Scalar Chain. Authority and communication flow from top to bottom in a defined chain. For example, if a junior in Department A needs information from a senior in Department C, the request travels up Department A's chain, across to Department C's top, and down to the senior in C.

Step 2. Gang Plank. In an emergency, two employees at the same level in different departments may communicate directly, bypassing the chain (with their superiors' knowledge). For example, in a fire drill, the head of section A talks directly to the head of section B to coordinate evacuation, without sending the message up and down the chain.

Final Answer: Scalar Chain: authority flows top-to-bottom in a clear line. Gang Plank: exception allowing same-level employees in different departments to communicate directly in an emergency.

Why Gang Plank Exists

The chain is meant to keep authority clear, but slavishly following it during emergencies wastes time. Fayol allowed a controlled bypass: same-level officers can talk directly, with their superiors aware of it.

EXPERT'S SOLUTION : *Tarun Nair; MBA, ISB Hyderabad*

Strategic angle. Define both terms clearly, describe the chain in words, then justify the exception.

Step 1. Scalar Chain: vertical chain of command from top to bottom.

Step 2. Gang Plank: horizontal shortcut between same-level officers across departments.

Step 3. Justification: emergencies need quick decisions; the chain's slowness would cause harm.

Final Answer: Scalar Chain is the formal top-to-bottom authority line; Gang Plank is the emergency shortcut for same-level lateral communication.

Q 2.12 A production manager at top level in a reputed corporate, Mr. Rathore holds the responsibility for ordering raw material for the firm. While deciding on the supplier for the financial year 2017–18, he gave the order to his cousin at a higher price per unit instead of the firm's usual supplier who was willing to lower the rates for the order. Which principle of management was violated by Mr. Rathore? What are

the positive impacts of following the above identified principle?

SOLUTION

Concept used. Fayol's principle of **Subordination of Individual Interest to General Interest** states that the interest of the organisation must take precedence over the personal interest of any employee. Mr. Rathore's preference for his cousin's higher price puts personal interest above the firm's interest, a clear violation.

Step 1. Identify the violation: Subordination of Individual Interest to General Interest.

Step 2. Explain the violation: the manager favoured a relative (individual interest) at a higher cost, harming the organisation (general interest).

Step 3. Positive impacts of following the principle:

- **Optimum use of resources:** the firm gets the lowest price and best quality.
- **Higher profit:** cost savings flow to the bottom line.
- **Fairness and ethical culture:** no nepotism, building trust among employees.
- **Sustainable growth:** ethical decisions support long-term reputation and survival.

Final Answer: Violated: Subordination of Individual Interest to General Interest. Positive impacts: optimum resource use, higher profit, fair culture, sustainable growth.

✗ Common Mistake

A common slip is to call this "Equity" or "Discipline". Both are wrong. The cue is favouritism of a personal interest over the firm's interest; that is exactly Subordination of Individual Interest.

EXPERT'S SOLUTION : Harshit Bose, M.Com, St. Xavier's College Kolkata

Quick reading. "Gave order to his cousin at higher price" = personal interest over general interest.

Step 1. Principle: Subordination of Individual Interest to General Interest.

Step 2. Why: cousin = personal; higher price = harm to firm.

Step 3. Benefits of following: lower cost, higher profit, ethical culture, long-term growth.

Final Answer: Violation: Subordination of Individual Interest to General Interest.
Benefits: cost saving, profit, ethics, growth.

Long Answer Type Questions

Q 2.13 Explain the Principles of Scientific Management given by Taylor.

SOLUTION

Concept used. F.W. Taylor proposed four **Principles of Scientific Management** to replace the rule-of-thumb approach with a science-based approach to work. The four principles work as a system.

Step 1. Science, not Rule of Thumb. Taylor insisted that every job should be analysed scientifically to find the “one best way” of doing it. Rule of thumb (working by experience or hunch) leads to inefficiency. Example: time-and-motion study to determine the best sequence of movements.

Step 2. Harmony, not Discord. There should be complete harmony between management and workers. Both sides must drop conflict and recognise that their interests are complementary. Taylor called this a “Mental Revolution”: a complete change of attitude on both sides.

Step 3. Cooperation, not Individualism. Management and workers must actively cooperate; neither should pursue purely individual interest. Profit-sharing schemes, joint decision-making and worker representation embody this principle.

Step 4. Development of each person to his/her greatest efficiency and prosperity. Workers should be trained and developed scientifically so that each individual reaches his maximum potential, benefiting both the worker (higher wages) and the firm (higher productivity).

Final Answer: Taylor’s four principles: Science not Rule of Thumb, Harmony not Discord, Cooperation not Individualism, Development of each person to greatest efficiency.

EXPERT'S SOLUTION : Meera Kapoor, MBA, IIM Ahmedabad

Strategic angle. The board paper rewards a numbered list with the four named principles, each followed by a one-line explanation and a real-world hook.

Step 1. Science not Rule of Thumb: one best way, scientifically determined; time-and-motion study is the classic illustration.

Step 2. Harmony not Discord: mental revolution on both sides; management treats workers fairly, workers commit to the firm's goals.

Step 3. Cooperation not Individualism: profit sharing, joint decisions, no us-vs-them attitude.

Step 4. Development of each to maximum efficiency: scientific selection, training and continuous development of every worker.

Why this matters. Marks scale with the number of named principles plus a one-line example each. Always list all four; never stop at three.

Final Answer: Taylor's four principles form a system: scientific method, harmony, cooperation, and maximum development of every person.

Q 2.14 Explain the following Principles of management given by Fayol with examples: (a) Unity of Direction, (b) Equity, (c) Esprit de Corps, (d) Order, (e) Centralisation and Decentralisation, (f) Initiative.

SOLUTION

Concept used. Fayol's 14 **Principles of Management** include the six listed. Each must be defined and illustrated with an example.

Step 1. (a) Unity of Direction. One head and one plan for a group of activities having the same objective. Example: a company's entire marketing department has one Marketing Head and follows one annual marketing plan.

Step 2. (b) Equity. Managers should treat all subordinates with kindness, fairness and justice. There should be no discrimination based on caste, religion or gender. Example: equal pay for equal work for both male and female employees in the same role.

Step 3. (c) Esprit de Corps. Management should foster team spirit and unity among employees. Example: organising team-building events, joint celebrations and group problem-solving sessions builds collective morale.

Step 4. (d) Order. "A place for everything and everything in its place"; for people, a place for everyone and everyone in his place. Example: a well-organised tool

room where every spanner has its slot; in HR, the right person assigned to the right role.

Step 5. (e) Centralisation and Decentralisation. The degree of concentration of authority at the top vs delegation downward should be balanced. Example: strategic decisions centralised at HQ; operational decisions decentralised to plant managers.

Step 6. (f) Initiative. Workers should be given the opportunity to think and execute new ideas. Example: a suggestion-box scheme where employee ideas are rewarded boosts initiative.

Final Answer: Six principles, each with a one-line definition and one example each, as above.

♥ Why This Matters

This is the most common 6-mark long-answer question in Chapter 2. Pre-memorise a one-line definition + one-line example for all 14 Fayol principles; you can then handle any six-principle variant.

EXPERT'S SOLUTION : Rohan Krishnan, MBA, IIM Indore

Strategic angle. Write each principle as a sub-heading: name, definition, example. The marker counts the named principle + the definition + the example as three separate ticks.

Step 1. Unity of Direction: one head + one plan for one objective; e.g. one marketing head for the whole marketing department.

Step 2. Equity: kindness, fairness, justice; e.g. equal pay for equal work.

Step 3. Esprit de Corps: team spirit; e.g. team-building events and joint celebrations.

Step 4. Order: a place for everything and everyone; e.g. organised tool room + right person in right role.

Step 5. Centralisation and Decentralisation: balanced authority concentration; e.g. strategy centralised, operations decentralised.

Step 6. Initiative: encourage worker ideas; e.g. suggestion-box scheme with rewards.

Final Answer: Six named Fayol principles, each with definition + example, as listed.

Q 2.15 Explain the technique of 'Functional Foremanship' and the concept of 'Mental Revolution' as enunciated by Taylor.

SOLUTION

Concept used. **Functional Foremanship** is Taylor's technique of dividing supervisory authority among eight specialised foremen instead of one general foreman, so that each worker can consult an expert for each kind of problem. **Mental Revolution** is Taylor's call for a complete change in attitude on the part of both management and workers, so that they stop seeing each other as adversaries and start cooperating.

Step 1. Functional Foremanship. Eight specialised foremen, four in the planning section and four on the shop floor.

- *Planning incharge:* Route Clerk, Instruction Card Clerk, Time and Cost Clerk, Disciplinarian.
- *Production incharge:* Speed Boss, Gang Boss, Repair Boss, Inspector.

The worker consults the relevant specialist instead of one overworked general foreman.

Step 2. Mental Revolution. Both sides must change their attitudes:

- Management stops seeing workers as wage-greedy and starts treating them as partners.
- Workers stop seeing management as profit-greedy and start committing to higher productivity.
- Both share the benefits of higher output: more profit for the firm, more wages for the worker.

Without this mental shift, scientific management fails.

Final Answer: Functional Foremanship: eight specialist foremen (4 planning + 4 production). Mental Revolution: change of attitude on both sides to mutual cooperation and shared gains.

EXPERT'S SOLUTION : Aditi Banerjee, MBA, IIM Calcutta

Strategic angle. Functional Foremanship needs the eight named roles; Mental Revolution needs the dual-side attitude shift. Both are routinely tested.

Step 1. Functional Foremanship structure: 8 foremen, 4 planning + 4 production. Name at least five of the eight roles.

Step 2. Mental Revolution: management changes attitude towards workers; workers change attitude towards management; both commit to mutual gain.

Step 3. Tie together: without mental revolution, functional foremanship is just an organogram; with it, scientific management becomes a culture.

Final Answer: Functional Foremanship = 8 specialist foremen. Mental Revolution = complete attitude shift on both management and worker sides.

Q 2.16 Discuss the following techniques of Scientific Work Study: (a) Time Study, (b) Motion Study, (c) Fatigue Study, (d) Method Study, (e) Simplification and Standardisation of work.

SOLUTION

Concept used. Taylor's **Scientific Work Study** comprises five techniques that together determine the most efficient way to do a job and the fairest workload.

Step 1. (a) Time Study. Scientific measurement (stopwatch) of the time required by an average worker to perform a defined task using standard methods. Output: fair day's work.

Step 2. (b) Motion Study. Study of the movements made by a worker while doing the job, to eliminate unnecessary motions. Output: minimum movement sequence, reduced fatigue.

Step 3. (c) Fatigue Study. Study of the causes and extent of physical and mental tiredness; sets the optimum frequency and duration of rest breaks.

Step 4. (d) Method Study. Identifies the most efficient method of performing a job, in terms of materials, machines, tools and sequence. Output: standard method.

Step 5. (e) Simplification and Standardisation. Reducing the variety of products, components and methods to a minimum (simplification) and setting fixed specifications for materials, tools and processes (standardisation). Output: lower cost, higher quality.

Final Answer: Five techniques: Time, Motion, Fatigue, Method and Simplification/Standardisation together build a science of work.

Exam Tip

Always give one specific outcome under each technique: fair day's work (time), minimum movement (motion), optimum rest (fatigue), standard method (method), lower cost (simplification).

EXPERT'S SOLUTION : Neha Iyengar, MBA, SP Jain

Strategic angle. List five techniques, each with a one-line definition and a one-line output.

Step 1. Time Study: stopwatch → fair day's work.

Step 2. Motion Study: filming movements → minimum motion sequence.

Step 3. Fatigue Study: tiredness analysis → optimum rest breaks.

Step 4. Method Study: best way analysis → standard method.

Step 5. Simplification + Standardisation: variety reduction + fixed specs → lower cost, higher quality.

Final Answer: Five named techniques, each delivering a measurable improvement in efficiency.

Q 2.17 Discuss the differences between the contributions of Taylor and Fayol.**SOLUTION**

Concept used. **Taylor and Fayol** are the two pioneers of modern management theory. They are complementary, not contradictory, but their contributions differ in perspective, focus and method.

Step 1. Perspective. Taylor approached management from the *shop floor upward*; Fayol approached it from the *top management downward*.

Step 2. Focus. Taylor focused on *operating efficiency*: making work more scientific. Fayol focused on *managing the whole organisation*: framing principles applicable to any function.

Step 3. Unity of Command. Taylor diluted it: under Functional Foremanship a worker receives orders from eight specialist foremen. Fayol was a *staunch proponent*: every subordinate should have one and only one boss.

Step 4. Personality. Taylor was a *scientist* (engineer trained in experimental method). Fayol was a *practitioner* (mining engineer who rose to General Manager and codified his experience).

Step 5. Applicability. Taylor's techniques apply mostly to *production and shop-floor management*; Fayol's principles apply universally to *every level and every function*.

Step 6. Methodology. Taylor used *scientific experiment*; Fayol used *personal observation and induction*.

Final Answer: Taylor (shop floor up, scientist, production focus, experiment) vs Fayol (top down, practitioner, whole organisation focus, observation). Complementary, not opposed.

EXPERT'S SOLUTION : *Karthik Sharma, MBA, MDI Gurgaon*

Strategic angle. Write a six-row comparison table: perspective, focus, unity emphasis, personality, applicability, methodology. Six rows = six clean ticks for the marker.

Step 1. Perspective: bottom-up (Taylor) vs top-down (Fayol).

Step 2. Focus: operating efficiency vs whole-organisation management.

Step 3. Unity of Command: Taylor diluted (8 foremen per worker) vs Fayol staunch proponent (one boss).

Step 4. Personality: scientist (Taylor) vs practitioner (Fayol).

Step 5. Applicability: production-floor focus (Taylor) vs universal (Fayol).

Step 6. Methodology: experiment (Taylor) vs observation (Fayol).

Final Answer: Six-point comparison; both complementary, not in conflict.

Q 2.18 Discuss the relevance of Taylor and Fayol's contribution in the contemporary business environment.

SOLUTION

Concept used. The **contemporary business environment** is shaped by rapid technology change, globalisation, customer focus, knowledge work, and concern for sustainability. Both Taylor's and Fayol's contributions remain relevant though they need adaptation.

Step 1. Taylor's relevance today.

- *Scientific approach:* Six Sigma, Lean, ISO standards all build on the principle of replacing rule of thumb with measurement.
- *Method and motion study:* still used in fast-food chains, e-commerce fulfilment centres and surgical OT layouts.
- *Differential pay:* modern incentive plans (variable pay, ESOPs, stock grants) extend the principle of paying for performance.

Step 2. Fayol's relevance today.

- *14 Principles*: Unity of Command, Scalar Chain, Equity, Esprit de Corps, Initiative all show up in modern HR manuals.
- *Functions of management*: Planning, Organising, Staffing, Directing, Controlling, the POSDC framework, is the spine of every MBA programme.

Step 3. Where adaptation is needed.

- Strict Unity of Command needs softening in matrix and agile teams where dotted-line reporting is unavoidable.
- Functional Foremanship's eight foremen is too rigid for today's cross-functional teams.
- Centralisation must be balanced with empowerment as knowledge workers expect autonomy.

Final Answer: Taylor (Six Sigma, motion study, performance pay) and Fayol (14 principles, POSDC) remain highly relevant today, but rigid application must be replaced with adaptive use.

EXPERT'S SOLUTION : *Suhana Khan, MBA, ISB Hyderabad*

Strategic angle. Structure as: Taylor today (3 modern echoes), Fayol today (3 modern echoes), what needs adaptation (3 caveats).

Step 1. Taylor today: Six Sigma, Lean OT design, performance-linked pay.

Step 2. Fayol today: 14 principles in HR manuals, POSDC in MBA curriculum.

Step 3. Adaptations: matrix teams soften Unity of Command; agile replaces strict foremanship; knowledge workers demand decentralisation.

Final Answer: Both Taylor and Fayol are relevant today but in adapted, flexible form rather than literal nineteenth-century application.

Q 2.19 Bhasin Limited was engaged in the business of food processing and selling its products under a popular brand. Lately the business was expanding due to good quality and reasonable prices. Also with more people working the market for processed food was increasing. New players were also coming to cash in on the new trend. In order to keep its market share in the short run the company directed its existing workforce to work overtime. But this resulted in many problems. Due to increased pressure of work the efficiency of the workers declined. Sometimes the subordinates had to work for more than one superior resulting in declining efficiency.

The divisions that were previously working on one product were also made to work on two or more products. This resulted in a lot of overlapping and wastage. The workers were becoming indisciplined. The spirit of teamwork, which had characterized the company, previously was beginning to wane. Workers were feeling cheated and initiative was declining. The quality of the products was beginning to decline and market share was on the verge of decrease. Actually the company had implemented changes without creating the required infrastructure. (a) Identify the Principles of Management (out of 14 given by Henry Fayol) that were being violated by the company. (b) Explain these principles in brief. (c) What steps should the company management take in relation to the above principles to restore the company to its past glory?

SOLUTION

Concept used. The case lists symptoms that map to specific violated Fayol principles. The matching protocol is: pick the cue, name the principle, explain it, then recommend the corrective step.

Step 1. Principles violated and their explanation.

- **Division of Work** (overlap of products across divisions): specialisation is lost when divisions are made to handle multiple products.
- **Unity of Command** (subordinates working for more than one superior): each worker should receive orders from only one boss.
- **Discipline** (workers becoming indisciplined): discipline is essential for smooth running of any organisation.
- **Esprit de Corps** (team spirit declining): the principle of team spirit under one common goal.
- **Initiative** (initiative declining): workers should be encouraged to come up with new ideas.
- **Stability of Personnel** (workers feeling cheated, threatening turnover): long tenures stabilise the workforce and motivation.

Step 2. Corrective steps:

- Restore *Division of Work*: assign each division back to one product to regain specialisation.
- Restore *Unity of Command*: one boss per subordinate; redraw the organisational chart.
- Restore *Discipline*: clear rules, fair penalties, lead by example.
- Rebuild *Esprit de Corps*: team-building events, joint celebrations, shared goals.
- Promote *Initiative*: suggestion box, rewards for new ideas, time for experimentation.

- Reinforce *Stability of Personnel*: end overtime mandates, restore fair workload, signal long-term commitment to workers.

Final Answer: Six Fayol principles violated: Division of Work, Unity of Command, Discipline, Esprit de Corps, Initiative, Stability of Personnel. Restoration requires reversing each one through specific managerial action.

EXPERT'S SOLUTION : *Pranav Sharma, MBA, XLRI Jamshedpur*

Strategic angle. For a six-principle case, write a 3-column structure in your answer: Cue → Principle → Remedy. Six rows = six clear ticks.

Step 1. Overlap of products → Division of Work → one product per division.

Step 2. Multiple bosses → Unity of Command → redraw chart.

Step 3. Indiscipline → Discipline → clear rules, fair enforcement.

Step 4. Team spirit waning → Esprit de Corps → team-building, joint goals.

Step 5. Initiative declining → Initiative → suggestion box, idea rewards.

Step 6. Workers feeling cheated → Stability of Personnel → end overtime, signal job security.

Final Answer: Six violations identified, explained and remedied; that is the full 6-mark answer.

Q 2.20 (Further information related to the Bhasin Limited case above.) The management of Bhasin Limited now realised its folly. In order to rectify the situation it appointed a management consultant, Mukti Consultants, to recommend a restructure plan to bring the company back on the rails. Mukti Consultants undertook a study of the production process at the plant and recommended the following changes: introduce scientific management; introduce production planning (routing, scheduling, dispatching, feedback); introduce Functional Foremanship; undertake Work Study; introduce Standardisation; introduce Differential Piece Rate System. (a) Do you think that introduction of scientific management as recommended by Mukti Consultants will result in intended outcome? (b) What precautions should the company undertake to implement the changes? (c) Give your answer with regard to each technique separately.

SOLUTION

Concept used. Scientific Management works when its techniques are implemented in spirit, not in letter. The Mukti recommendations cover six techniques; each has a precaution to ensure intended outcome.

Step 1. (a) Will it work? Yes, provided the techniques are introduced with the right mindset (Mental Revolution) and accompanied by adequate training and communication. Without these, the techniques will be resisted and the firm will not regain its glory.

Step 2. (b) and (c) Precautions per technique.

- *Production Planning (routing, scheduling, dispatching, feedback)*: ensure supply chain and IT systems are upgraded to support real-time monitoring; otherwise plans will fail at execution.
- *Functional Foremanship*: train each of the eight specialists fully; clarify authority boundaries; otherwise workers will receive conflicting instructions.
- *Work Study (Time, Motion, Fatigue, Method)*: involve workers in setting standards, not impose them; otherwise standards are seen as exploitative.
- *Standardisation*: fix realistic standards based on average worker capability, not the fastest; otherwise the bar is unfair.
- *Differential Piece Rate*: explain the wage system transparently and ensure the lower rate is still adequate for survival; otherwise the system breeds resentment.
- *Cross-cutting*: hold mental-revolution sessions for both management and workers; without attitude change, all techniques fail.

Final Answer: Yes, scientific management will deliver intended outcomes provided each technique is introduced with the right precautions: training, worker participation, transparent communication and a parallel Mental Revolution.

♥ Why This Matters

Case-based long answers reward the technique-by-technique structure. Score = (named technique + precaution) per row. Aim for six rows.

EXPERT'S SOLUTION : Ananya Iyer, MBA, IIM Kozhikode

Strategic angle. For part (a) answer “Yes, conditionally” with one line. For (b) and (c), give a six-row structure: Technique → Precaution.

Step 1. Production planning: invest in IT and supply chain.

Step 2. Functional foremanship: train specialists, clarify boundaries.

Step 3. Work study: involve workers in standard setting.

Step 4. Standardisation: realistic standards on average worker.

Step 5. Differential piece rate: transparent communication, adequate minimum wage.

Step 6. Cross-cutting: drive Mental Revolution for both sides.

Final Answer: Scientific management will work conditionally; six precautions, one per technique, must accompany implementation.

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Key Takeaways

- Principles of management are general, flexible guidelines tested by experience; they are universal, behavioural, contingent and mainly cause-effect in nature.
- Fayol's 14 principles cover the whole organisation; Taylor's 4 principles + techniques target the shop floor.
- Scalar Chain is the formal vertical line; Gang Plank is the lateral emergency exception.
- Scientific work study has 5 techniques: Time, Motion, Fatigue, Method, Simplification + Standardisation.
- Functional Foremanship divides supervisory work among 8 specialised foremen (4 planning, 4 production).
- Mental Revolution: complete attitude shift on both management and worker sides; without it, scientific management fails.
- Both Taylor and Fayol remain highly relevant today, in adapted form.

End of NCERT Exercises