

**Syllabus for Computer Based Written Test for various  
Non-executive Posts in S-7, S-5 & S-3 Grade w.r.t  
Advt. no GAIL/OPEN/MISC/01/2022**

**1. JR. ENGINEER (MECHANICAL)**

<b>#</b>	<b>Syllabus</b>
<b><u>Part I</u></b>	<ul style="list-style-type: none"> <li>- Basic Physics &amp; Measurement systems like Vernier Callipers, Micrometers, Wire Gauge</li> <li>- Tool Box Management</li> <li>- Cutting &amp; Threading</li> <li>- Scrapping and Abrasive Operations</li> <li>- Pipe Joints – Flanged or welding</li> <li>- Machining</li> <li>- Fire Fighting Equipment</li> <li>- Engineering mechanics (Preliminary)</li> <li>- Strength of materials (Preliminary)</li> <li>- Hydraulics and fluid mechanics (Preliminary)</li> <li>- Hydraulic Machines (Practical aspects)</li> <li>- Heat transfer, refrigeration and air conditioning(Preliminary)</li> <li>- Theory of Machines (Basics)</li> <li>- Workshop technology</li> <li>- Production engineering</li> <li>- Engineering Metrology and measurements</li> <li>- Machine design</li> <li>- Engineering Materials</li> <li>- Welding Science</li> <li>- Safety Gears &amp; PPEs</li> </ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

## **2. JR. ENGINEER (CHEMICAL)**

<b><u>#</u></b>	<b><u>Syllabus</u></b>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Fluid Mechanics</li><li>- Stoichiometry / Material &amp; Energy Balance</li><li>- Petroleum refinery engineering</li><li>- fertilizer Technology</li><li>- heat transfer</li><li>- mass transfer</li><li>- chemical engineering thermodynamics</li><li>- fuels and combustion</li><li>- process control and instrumentation</li><li>- furnace Technology</li><li>- unit operations</li><li>- Process Equipment &amp; plant design</li><li>- Process Technologies</li><li>- Reaction Engineering</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

### **3. FOREMAN (ELECTRICAL)**

#	<u>Syllabus</u>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Fire Fighting Equipment</li><li>- Basic Physics &amp; Ohm's Law, Kirchoff's law etc.</li><li>- Tool Box Management</li><li>- Electrical Insulation</li><li>- Electrical circuits and Fields</li><li>- Electrical machines-Transformers, Generators, AC &amp; DC Motors etc.</li><li>- Electrical Power system</li><li>- Electrical measurements and measuring instruments</li><li>- Electrical Protection system</li><li>- HT &amp; LT Switchgear Panel &amp; it's accessories</li><li>- Winding technique</li><li>- Wiring and lighting</li><li>- Electrical earthing system</li><li>- Battery Banks system</li><li>- Power Electronics</li><li>- Electrical Wiring and Jointing</li><li>- Safety Gears &amp; PPEs</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

#### **4. FOREMAN (INSTRUMENTATION)**

#	<u>Syllabus</u>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Fire Fighting Equipment</li><li>- (Preliminary) Physics</li><li>- Tool Box Management</li><li>- Electrical Insulation</li><li>- Basics of circuits and Measurement systems</li><li>- Transducers, mechanical measurement and industrial instrumentation</li><li>- Analog electronics</li><li>- Digital electronics</li><li>- Electrical and electronic measurements</li><li>- Control system and process control including control valves, pressure safety valves etc.</li><li>- Analytical, optical and biomedical instrumentation</li><li>- Measuring instruments - Pressure gauges, temperature gauges, flowmeters, level gauges, pressure transmitters, temperature transmitters etc.</li><li>- Calibration of instruments</li><li>- Instrument tubings</li><li>- PLC/DCS</li><li>- Loop checking</li><li>- P &amp; ID diagrams</li><li>- Electrical Wiring and Jointing</li><li>- Safety Gears &amp; PPEs</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

## **5. FOREMAN (MECHANICAL)**

#	<b><u>Syllabus</u></b>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Basic Physics &amp; Measurement systems like Vernier Callipers, Micrometers, Wire Gauge</li><li>- Tool Box Management</li><li>- Cutting &amp; Threading</li><li>- Scrapping and Abrasive Operations</li><li>- Pipe Joints – Flanged or welding</li><li>- Machining</li><li>- Fire Fighting Equipment</li><li>- Engineering mechanics (Preliminary)</li><li>- Strength of materials (Preliminary)</li><li>- Hydraulics and fluid mechanics (Preliminary)</li><li>- Hydraulic Machines (Practical aspects)</li><li>- Heat transfer, refrigeration and air conditioning(Preliminary)</li><li>- Theory of Machines (Basics)</li><li>- Workshop technology</li><li>- Production engineering</li><li>- Engineering Metrology and measurements</li><li>- Machine design</li><li>- Engineering Materials</li><li>- Welding Science</li><li>- Safety Gears &amp; PPEs</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

## 6. FOREMAN (CIVIL)

#	<u>Syllabus</u>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>➤ Surveying<ul style="list-style-type: none"><li>○ Plain Table Survey</li><li>○ Theodolite Surveying</li><li>○ Soil Survey and Analysis</li><li>○ Chain Surveying</li></ul></li><li>➤ Cement Concrete and Reinforced Cement Concrete<ul style="list-style-type: none"><li>○ Basics of Plain Cement Concrete (different grades)</li><li>○ Basics of Design Mix Concrete (different grades)</li><li>○ Reinforcement Steel (Weight Analysis &amp; Composition of Steel)</li></ul></li><li>➤ Building Materials<ul style="list-style-type: none"><li>○ Sand</li><li>○ Aggregates</li><li>○ Cement</li><li>○ Bricks</li><li>○ Water</li><li>○ Bitumen</li></ul></li><li>➤ Material Testing<ul style="list-style-type: none"><li>○ Concrete Testing</li><li>○ Bricks Testing</li><li>○ Aggregates Testing</li><li>○ Bitumen Testing</li><li>○ Steel Testing</li><li>○ Soil Testing</li><li>○ Water Testing</li></ul></li><li>➤ Plumbing &amp; Sewerage<ul style="list-style-type: none"><li>○ Waste Water Treatment</li><li>○ Basic of Plumbing (Pipes &amp; Flow Analysis)</li></ul></li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics))

## **7. JR. SUPERINTENDENT (OFFICIAL LANGUAGE)**

#	<u>Syllabus</u>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Knowledge of Official Language policy and OL act 1963 and provisions thereof</li><li>- OL rules 1976 and various provisions and rules framed under it</li><li>- Comprehension in Hindi &amp; English</li><li>- Administrative terminology (Hindi &amp; English)</li><li>- Hindi literature</li><li>- Hindi Grammar</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

## **8. JR. SUPERINTENDENT (HR)**

#	<b><u>Syllabus</u></b>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- General Management &amp; School of Management thoughts</li><li>- Broad Functions of Personnel Management/ HRM (Function; Org. Structure; Manpower Planning; Recruitment &amp; Selection; Wage &amp; Salary Administration; Grievance Handling</li><li>- Broad Functions of HRD (PMS; Training &amp; Development; Workers Education Programmes; Training Effectiveness)</li><li>- Organizational Behaviour &amp; Organizational Development</li><li>- Industrial Relations &amp; Trade Unions (Participative Management)</li><li>- Labour Laws (Objective; Principles; Evolution of Labour Law in India; Details on Factories Act 1948; ESI Act 1948; Employee Provident Fund &amp; Miscellaneous Provisions Act 1952; Payment of Gratuity Act 1972; Employee Compensation Act 1923; Maternity Benefit Act 1961; Min. Wages Act 1948; Payment of Wages Act 1936 ; Contract Labour (Regulation &amp; Abolition) Act, 1970; Industrial Disputes Act 1947; The Industrial Employment (Standing Orders) Act, 1946; Ind. Disputes Act 1947; Payment of Bonus Act 1965 etc.)</li><li>- Disciplinary Proceedings</li><li>- Information Technology (IT) and use of applications in HR (ERP; HR Analytics etc.)</li><li>- Business Communication; Record Management; Data analysis &amp; Interpretation</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

## **9. JR. CHEMIST**

#	<b><u>Syllabus</u></b>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Polymer chemistry</li><li>- Inorganic chemistry</li><li>- Physical chemistry</li><li>- Organic chemistry</li><li>- Water chemistry</li><li>- Environmental Chemistry</li><li>- Analytical chemistry</li><li>- Group theory and spectroscopy</li><li>- Principle of chromatography</li><li>- Quantum chemistry</li><li>- Testing equipment in Labs</li><li>- Classification of elements</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

## **10. TECHNICAL ASSISTANT (LABORATORY)**

#	<u>Syllabus</u>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Polymer chemistry</li><li>- Basic chemistry</li><li>- Environmental Chemistry</li><li>- Analytical chemistry</li><li>- Water chemistry</li><li>- Group theory and spectroscopy</li><li>- Principle of chromatography</li><li>- Testing equipment in Labs</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

## **11. OPERATOR (CHEMICAL)**

#	<u>Syllabus</u>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Atomic Mass, Atoms,</li><li>- Gas Laws,</li><li>- stoichiometry / Material and energy balance</li><li>- Kinetic Theory of Gases</li><li>- Laws of Equilibrium</li><li>- Chemical Bonds &amp; Chemical Thermodynamics</li><li>- Vapor liquid equilibrium, Chemical reaction equilibrium</li><li>- States of matter, Acids and Bases, Oxidation</li><li>- Hydrocarbons, Petrochemicals, Distillation, Refining, exchange equipment, humidification operation, Refrigeration and liquefaction,</li><li>- polymerization process technology, inorganic polymers</li><li>- combustion process</li><li>- Conductance, Electrochemistry</li><li>- Electrical and Magnetic Properties of Atoms and Molecules</li><li>- Basics of Organic Chemistry</li><li>- Basics of unit operations</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

## **12. TECHNICIAN (ELECTRICAL)**

#	<u>Syllabus</u>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Fire Fighting Equipment</li><li>- Basic Physics &amp; Ohm's Law, Kirchoff's law etc.</li><li>- Tool Box Management</li><li>- Electrical Insulation</li><li>- Electrical circuits and Fields</li><li>- Electrical machines-Transformers, Generators, AC &amp; DC Motors etc.</li><li>- Electrical Power system</li><li>- Electrical measurements and measuring instruments</li><li>- Electrical Protection system</li><li>- HT &amp; LT Switchgear Panel &amp; it's accessories</li><li>- Winding technique</li><li>- Wiring and lighting</li><li>- Electrical earthing system</li><li>- Battery Banks system</li><li>- Power Electronics</li><li>- Electrical Wiring and Jointing</li><li>- Safety Gears &amp; PPEs</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

### **13. TECHNICIAN (INSTRUMENTATION)**

#	<u>Syllabus</u>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Fire Fighting Equipment</li><li>- (Preliminary) Physics</li><li>- Tool Box Management</li><li>- Electrical Insulation</li><li>- Basics of circuits and Measurement systems</li><li>- Transducers, mechanical measurement and industrial instrumentation</li><li>- Analog electronics</li><li>- Digital electronics</li><li>- Electrical and electronic measurements</li><li>- Control system and process control including control valves, pressure safety valves etc.</li><li>- Analytical, optical and biomedical instrumentation</li><li>- Measuring instruments - Pressure gauges, temperature gauges, flowmeters, level gauges, pressure transmitters, temperature transmitters etc.</li><li>- Calibration of instruments</li><li>- Instrument tubings</li><li>- PLC/DCS</li><li>- Loop checking</li><li>- P &amp; ID diagrams</li><li>- Electrical Wiring and Jointing</li><li>- Safety Gears &amp; PPEs</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

#### **14. TECHNICIAN (MECHANICAL)**

#	<u>Syllabus</u>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Basic Physics &amp; Measurement systems like Vernier Callipers, Micrometers, Wire Gauge</li><li>- Tool Box Management</li><li>- Cutting &amp; Threading</li><li>- Scrapping and Abrasive Operations</li><li>- Pipe Joints – Flanged or welding</li><li>- Machining</li><li>- Fire Fighting Equipment</li><li>- Engineering mechanics (Preliminary)</li><li>- Strength of materials (Preliminary)</li><li>- Hydraulics and fluid mechanics (Preliminary)</li><li>- Hydraulic Machines (Practical aspects)</li><li>- Heat transfer, refrigeration and air conditioning(Preliminary)</li><li>- Theory of Machines (Basics)</li><li>- Workshop technology</li><li>- Production engineering</li><li>- Engineering Metrology and measurements</li><li>- Machine design</li><li>- Engineering Materials</li><li>- Welding Science</li><li>- Safety Gears &amp; PPEs</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

## **15. TECHNICIAN (TELECOM & TELEMETRY)**

#	<u>Syllabus</u>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Safety Gears &amp; PPEs</li><li>- Basic Physics &amp; Electrical Engineering</li><li>- Tool Box Management</li><li>- Basics of Networking and Network Devices such as, Router, Switches, Modems</li><li>- Motherboard, CPU, Memory</li><li>- Electrical Wiring and Jointing</li><li>- Basics of Communication systems – Wired and Wireless systems, OFC, Microwave etc.</li><li>- UPS &amp; Batteries</li><li>- Basics of Power Electronics such as rectifiers, DC/AC converters etc.</li><li>- GPRS, GSM, 3G, 4G</li><li>- Mobile and Other Wireless Device (walkie talkie etc.) Communication</li><li>- Network theory and Network protocol</li><li>- Electromagnetic theory (Preliminary)</li><li>- Control systems Basics</li><li>- Basic Analog Electronics</li><li>- Digital electronics Basics</li><li>- Semiconductors Basics</li><li>- Transistors Basics</li><li>- Instruments and measurements Basics</li><li>- Computer and microprocessor Basics</li><li>- Amplifiers and oscillators</li><li>- Linear and nonlinear analog circuits</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

## **16. OPERATOR (FIRE)**

<b><u>#</u></b>	<b><u>Syllabus</u></b>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Chemistry of Fire &amp; Extinction Methods</li><li>- Fire Extinguishing Mediums</li><li>- Fire Hose &amp; fittings</li><li>- Ladders</li><li>- Lines and knots</li><li>- Fire Pumps &amp; Hydrant System , water network</li><li>- Portable Fire Extinguishers, small gears</li><li>- Breathing Apparatus Set &amp; BA Procedure</li><li>- Basic First Aid &amp; CPR</li><li>- Electrical Fires</li><li>- High Rise Building &amp; Evacuation Methods</li><li>- Fixed Fire Fighting Systems</li><li>- Hydrocarbon Fire Fighting</li><li>- Mobile Fire Appliances /Fire tender</li><li>- Fire Ground Operation</li><li>- Communication &amp; mobilization</li><li>- Control Room Operations &amp; Procedure</li><li>- Work Permit System</li><li>- Rescue &amp; search methods, Methods of entry and types</li><li>- Fireman's Outfit &amp; donning capability</li><li>- Fire Drills</li><li>- Personnel Protective Equipment</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

## **17. ASSISTANT (STORES & PURCHASE)**

#	<b><u>Syllabus</u></b>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Introduction to warehousing<ul style="list-style-type: none"><li>○ Warehouse Operations</li><li>○ Functions</li><li>○ Centralized and decentralized</li><li>○ Storage systems</li><li>○ Warehousing cost analysis</li><li>○ Warehouse layout</li></ul></li><li>- Inventory<ul style="list-style-type: none"><li>○ Basic Concepts</li><li>○ Functions</li><li>○ Types</li><li>○ Cost</li><li>○ Need for inventory</li><li>○ Just in time</li></ul></li><li>- Inventory Control<ul style="list-style-type: none"><li>○ Inventory Control Techniques</li><li>○ Requirement Planning</li></ul></li><li>- Principles and Performance measures of material handling systems<ul style="list-style-type: none"><li>○ Fundamentals of material handling</li><li>○ Material handling</li><li>○ Various types of material handling requirement</li><li>○ Warehouse (Temperature controlled)</li></ul></li><li>- Modern Warehousing<ul style="list-style-type: none"><li>○ Automated storage and retrieval systems and their operations</li><li>○ Barcoding technology and applications in logistics industry</li><li>○ RFID technology and applications</li><li>○ Advantages of RFID</li></ul></li><li>- Basic knowledge of tendering / procurement including evaluation of bids.</li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

## **18. ACCOUNTS ASSISTANT**

#	<b><u>Syllabus</u></b>	
<b><u>Part I</u></b>	➤ Accountancy	<ul style="list-style-type: none"> <li>○ Accounting concepts and conventions</li> <li>○ Depreciation, Depletion and Amortisation (Concepts &amp; Methods)</li> <li>○ Inventory Valuation</li> <li>○ Capital and Revenue expenditure/receipts</li> <li>○ Bank Reconciliation Statement &amp; Rectification of Errors</li> <li>○ Lease/ Hire Purchase Accounting</li> <li>○ Revenue Recognition</li> </ul>
	➤ Basic of Mercantile Law	<ul style="list-style-type: none"> <li>○ Contract Act, 1872</li> <li>○ Sale of Goods act, 1930</li> <li>○ Negotiable Instruments Act, 1881</li> </ul>
	➤ Company's Act 2013	<ul style="list-style-type: none"> <li>○ Accounts &amp; Audit</li> <li>○ Schedule II (Depreciation)</li> <li>○ Schedule-III (Financial Statements)</li> <li>○ CSR provision</li> </ul>
	➤ Income Tax Act 1961	<ul style="list-style-type: none"> <li>○ Income Tax - Basic Concepts , Residential Status</li> <li>○ Exempted Income and Income Tax Deductions(Chapter-VI A of Income Tax 1961)</li> <li>○ Heads of Income (concepts &amp; key provisions)</li> <li>○ Provision relating to TDS &amp; Forms to be filed with Income Tax Department</li> </ul>
	➤ Goods & Services Act	<ul style="list-style-type: none"> <li>○ Fundamental Concepts of GST including</li> <li>○ GST Input Tax credit provisions / documentations</li> </ul>
	➤ Cost accounting & Management Accounting	<ul style="list-style-type: none"> <li>○ Cost Accounting basic – Material, Labour &amp; Overhead</li> <li>○ Fixed Cost &amp; Variable Cost</li> <li>○ Marginal &amp; Relevant / Incremental Costing, Decision Making</li> <li>○ Methods of Costing</li> </ul>
	➤ Financial Management	<ul style="list-style-type: none"> <li>○ Basic Concepts</li> <li>○ Financial Ratio Analysis</li> </ul>
	➤ Computer (MS – Office) and financial packages proficiency	
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)	

## **19. MARKETING ASSISTANT**

<b><u>#</u></b>	<b><u>Syllabus</u></b>
<b><u>Part I</u></b>	<ul style="list-style-type: none"><li>- Marketing concept:<ul style="list-style-type: none"><li>○ Core marketing concepts</li><li>○ Segmentation, Targeting and Positioning,</li><li>○ Product &amp; Pricing,</li><li>○ Promotion Mix</li><li>○ Demand, Supply and Market equilibrium</li></ul></li><li>- Consumer Behaviour<ul style="list-style-type: none"><li>○ Consumer Needs &amp; Motivation, Perception &amp; Attitudes</li><li>○ Consumer Decision making process</li></ul></li><li>- Advertising Management<ul style="list-style-type: none"><li>○ Advertising needs, importance and working</li><li>○ Media planning &amp; scheduling</li><li>○ Offline &amp; Online marketing strategies</li><li>○ Brand management: Designing and implementing of brand strategies</li></ul></li><li>- Retail Marketing<ul style="list-style-type: none"><li>○ Retail Marketing &amp; Merchandising</li><li>○ Supply Chain Management</li></ul></li><li>- Business &amp; Management Accounting<ul style="list-style-type: none"><li>○ Standard Costing</li></ul></li><li>- Business Laws<ul style="list-style-type: none"><li>○ Indian Contract Act</li><li>○ Sale of Goods Act</li><li>○ Companies Act</li><li>○ LC / Guarantee</li></ul></li></ul>
<b><u>Part II</u></b>	General Aptitude Test (Viz. General Knowledge, Logical Reasoning, Current Affairs, Visual Reasoning, English Comprehension, Mathematics)

- There will be a total of 100 questions in the Computer Based Written Test. Each question has equal mark i.e. 1 mark per question and total of 100 marks.
- There will be negative marking in the written test.  $\frac{1}{4}^{\text{th}}$  mark will be deducted for each wrongly answered question. No marks will be deducted for an attempted question.