

00054614

**MANAGEMENT INFORMATION SYSTEM IN HOSPITALITY INDUSTRY**  
**PAPER 2 – SOLUTION**

**Q.1.A Select an appropriate answer**

**05 Marks**

- 1) Which of the following directly link reservation systems of hotel, airline, car rental, and travel agency companies on a worldwide basis?
  - a. Internet distribution systems
  - b. Travel.com
  - c. **Global distribution system**
  - d. Application service providers
- 2) All of the following functions are performed by the rooms management module of a hotel property management system EXCEPT:
  - a. Identifying room status
  - b. Assigning guestroom for cleaning
  - c. Organizing housekeeping activities
  - d. **Posting entries to guest accounts**
- 3) A room status discrepancy occurs when the housekeeping status report does not match:
  - a. **the records at the front desk**
  - b. the daily work order report
  - c. the general manager's daily report
  - d. the occupancy forecast report.
- 4) Which of the following food and beverage software applications would help a manager determine the most profitable price to assign a particular menu item?
  - a. recipe management application
  - b. **menu engineering application**
  - c. standard recipe application
  - d. postcosting application
- 5) Which of the following types of point-of-sale printers is designed to produce a continuous detailed record of all transactions entered anywhere in a POS system?
  - a. guest check printers
  - b. receipt printers
  - c. workstation printers
  - d. **journal printers**

**Q.1.B Match the Columns (Answers)**

**05 Marks**

- |                              |                              |
|------------------------------|------------------------------|
| 1. Stars                     | a. High in MM and high in CM |
| 2. DBMS                      | b. Oracle                    |
| 3. Master Folio              | c. Guest Accounting Module   |
| 4. Check In/Check Out Report | d. Reservation System        |
| 5. Settlement Keys           | e. Point of Sale             |

**Q.1. C Define the following**

**05 MARKS**

1. **Non Guest Folio:** Non-guest folios are created for individuals who have in-house charge privileges but are not registered guests in the hotel. These individuals may include health club members, corporate clients, recreation club members, political leaders, or local celebrities.

2. **GDS:** Global distribution systems (GDSs) are often formed as joint ventures linking a number of diverse businesses. By directly linking the reservation systems of hotel, airline, car rental, and travel agency companies and a worldwide basis, global distribution systems provide access to travel and tourism inventories around the world.
3. **Database Management Software :** A DBMS is a software that allows creation, definition and manipulation of database. DBMS is actually a tool used to perform any kind of operation on data in database. DBMS also provides protection and security to database.
4. **Menu Mix:** Determining how much each product receives from the gross sales in your restaurant. The percentage of sales volume each item in your restaurant represents in a given week
5. **System Conversion:** System conversion is the process of transitioning from an installed (legacy) system to a new system..

**Q.2. Answer Any Three of following**

15 Marks

**1) Elaborate MIS Personnel**

In large, fully automated hospitality properties, the MIS management staff may consist of a property systems manager and department systems supervisors. Generally, the property systems manager participates in the evaluation, selection, and installation of system hardware and is trained in network operations for specific software applications used throughout the property. The property systems manager, also known simply as the systems manager, provides on-premises systems support and, when necessary, functions as a network administrator and/or an applications software analyst.

Department systems supervisors are typically individuals already employed within a specific department who receive extensive training in the operation of specialty hardware, software, and network components used in the operating departments. Department systems supervisors train others within their operating departments and provide technical support services as appropriate.

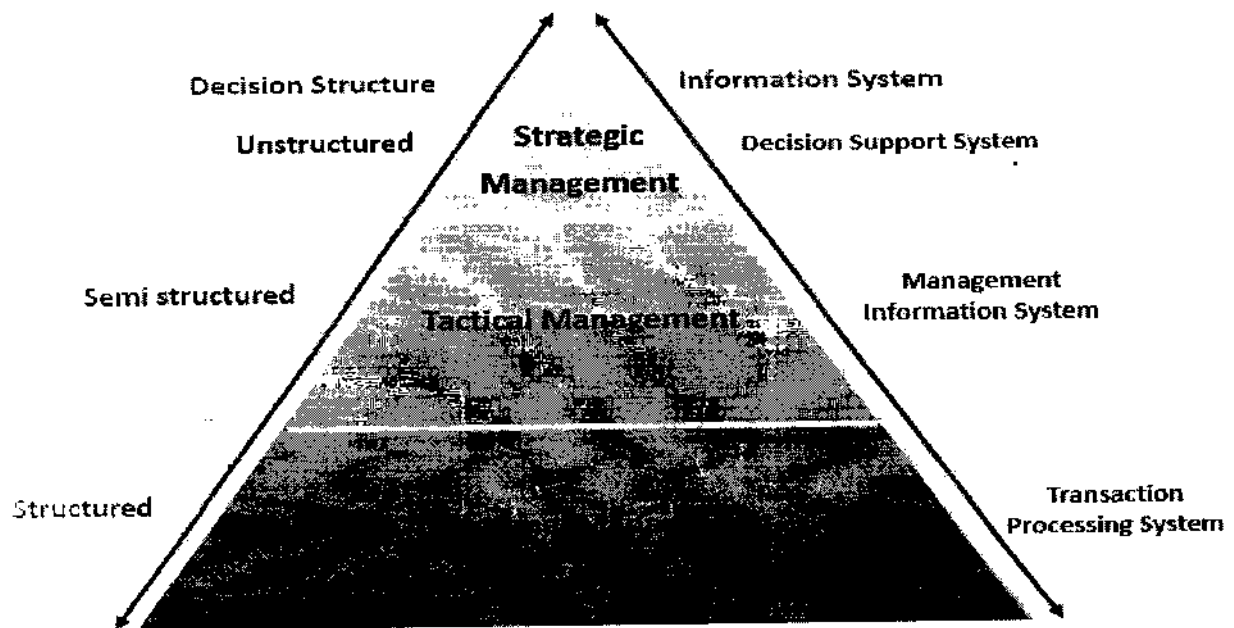
Duties of a property systems manager include:

- Planning and controlling MIS activities, which include identifying the processing priorities within the system.
- Selecting department systems managers and establishing training programs.
- Managing multi-processor environments, which include developing system configuration and design alternatives in relation to the placement and processing capabilities of system components.
- Designing and implementing information back-up and security controls.
- Oversight of local and wide area networks, including elements of access and security.

**2) Define information system and explain its types.**

THE INFORMATION SYSTEMS of automated hotels and restaurants can produce literally hundreds of reports for managers. However, simply distributing reports does not in itself ensure an effective information system. To achieve the full potential of an automated information system, system functions must align with management's information needs.

Types of Information Systems: The type of information system that a user uses depends on their level in an organization. The following diagram shows the three major levels of users in an organization and the type of information system that they use.



### Transaction Processing Systems (TPS)

This type of information system is used to record the day to day transactions of a business. An example of a Transaction Processing System is a Point of Sale (POS) system. A POS system is used to record the daily sales.

### Management Information Systems (MIS)

Management Information Systems are used to guide tactic managers to make semi-structured decisions. The output from the transaction processing system is used as input to the MIS system.

### Decision Support Systems (DSS)

Decision support systems are used by top level managers to make semi-structured decisions. The output from the Management Information System is used as input to the decision support system. DSS systems also get data input from external sources such as current market forces, competition, etc.

### 3) What are the general principles to be followed for securing information system.?

There are three major areas of MIS security—power backup systems, information backup systems, and information protection. The management of an organization focuses on the risks involved during power failure, information backup procedures, and unprotected information that might pose a potential threat to the hospitality operations. It may so happen that a competing hotel might gain access to the guest history files, which could lead to a hotel losing revenue. However, these can be avoided with proper security systems.

#### Power Backup Systems:

Fluctuation or interruption of power supply can lead to problems in working with computers. This problem can be significantly reduced by using an uninterruptible power supply (UPS). The UPS is equipped with a battery

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that is placed on the computer's electric line so that if there is any fluctuation in the power line of the computer, it would activate the battery, which would compensate for the energy deficiencies. This battery backup gives the computer continuous power supply. The system automatically recharges the battery as and when a normal power source becomes available.

A preventive maintenance programme is also necessary to protect against system breakdown. There should also be a predetermined emergency maintenance plan, outlining the steps to be followed during a crisis. For example, in addition to power backup systems, there should also be plans for hardware backup availability, that is, sources for quickly obtaining essential parts such as a printer or keyboard.

#### Information Backup Procedures:

Information backup should be a standard operating procedure to ensure that no data is ever lost. There are three main ways of maintaining information backup:

- Redundant copy
- Duplicate copy
- Hard copy

#### Information Protection:

Information protection is much more complicated than power backup procedures or information backup procedures, and should involve strategic considerations. Information must be protected from two major threats – external and internal.

##### External threats:

Since an organization is connected to external devices through the Internet, there could be instances of some of the data being transferred from the hotel's system to an individual's system. Cybercrime is now a huge threat to society and is caused by criminal or irresponsible action by individuals, making the Internet and other networks vulnerable to its effects. Hacking can be carried out by either an outsider or an employee of the company, who uses the Internet and other networks to steal or damage data and programs.

##### Internal threats:

To reduce internal threats to the security of information, organizations have passwords and different authorization levels for accessing the data. Security codes (e.g., a multilevel password system) are being used for security management. In this procedure, passwords are allotted to every individual using the system. Data would be provided as per the authorization level accessibility of the password. Hence, a waiter's password will not have the ability to void a sale or view the sales figures of an outlet, but the manager's password would have access to such data. Routine maintenance of the software and software updates are necessary to avoid transfer of information to unauthorized individuals.

A computer system may also be affected by a virus from either external or internal sources. A virus is an unauthorized programmed code that attaches itself to other programs. Viruses usually enter computer systems through external programs or files.

#### 4) What are 10 never of system selection?

Throughout the selection & installation process, it is helpful to keep the "nevers" of technology purchasing in mind.

- Never purchase hardware before software. After selecting software first, identify the hardware it requires.

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- Never make a purchase decision based solely on cost. Too often, economic factors are given a disproportionate weight in the decision process.
- Never lose control of the purchasing process. Develop request for proposal documents, script on-site vendor demonstrations, and apply uniform criteria when evaluating vendor proposals.
- Never rely on enhancement promises. A system feature that is advertised, but not yet available for sale, may not actually become available for some time.
- Never be the first system user. New systems have no operational history and, therefore, are difficult to evaluate.
- Never allow technology to dictate operations. Changing operations to fit the demands of the technology is reverse logic (i.e., the tail wagging the dog).
- Never be the largest system user. Pushing the capabilities of a system's processing speed, file parameters, memory capabilities, and other functions may lead to a series of problems, many of which may not be resolved in a timely manner.
- Never be the last system user. System maintenance, ongoing technical support, enhancements, and the like may be difficult or impossible to obtain once the vendor has abandoned the product.
- Never allow a vendor to rewrite the business's technology requirements. A system that meets vendor specifications may not meet business needs; the focus must be on business needs.

#### **5) Why analyzing the current information need is important?**

The first step in analyzing the information needs of a business is to identify the types of information that various levels of management use in the course of operations. This can be done by compiling samples of reports presently prepared for management - for example, the daily operations report, basic financial statements, and reports. Once collected, the reports can be analyzed in relation to such variables as purpose, content, distribution, and frequency.

Report analysis identifies the types of information management uses, but does not necessarily reveal the information needs of the business. A separate survey needs to be conducted to evaluate the effectiveness of the format and content of current reports. Survey findings can provide the basis for immediate improvements in the information system and enable a more in-depth analysis to include flowcharts and a property profile.

A property profile compiles statistics about the installed information system. The types of categories and number of individual entries will vary from property to property. A property profile can be invaluable when communicating information needs of the business to system vendors. A well-designed property profile allows vendors to compare the property's information needs to those of similar properties. In addition, a property profile enables management to conduct a more informed and efficient review of technology sales literature.

#### **6) What do you mean by single vendor and multi vendor contract agreements?**

##### **Contractual Arrangements**

In relation to hospitality technology, there are several types of contractual arrangements. Three common agreements are:

- Single-vendor contracts.
- Multi-vendor contracts.
- Other equipment manufacturer (OEM) contracts.

A single-vendor contract refers to an agreement to purchase hardware software, and netware from the same vendor. In most cases, the vendor makes the necessary hardware, software, and netware modifications before system implementation. A single-vendor contract clearly identifies the vendor's responsibilities in relation to system performance and security and avoids the kind of confusion that may arise in other contractual arrangements when the lines of responsibility are not so clearly defined.

A multi-vendor contract refers to an agreement to purchase system components from more than one vendor. The hardware components may be purchased directly from the manufacturer or purchased through a software vendor, who serves as a value-added reseller. In either case, the hardware components or the accompanying operating system may require modifications by the software provider in order to perform effectively. Similarly, network features may require modification based on hardware and software specifications.

An other equipment manufacturer (OEM) contract refers to a situation in which a business agrees to purchase hardware, software and netware from a single source, and the single source takes responsibility for the performance of the technology application. OEM contracts generally involve purchasing a complete system that arrives at the property ready for installation. This kind of contractual arrangement provides a business with the equivalent of a single-vendor contract, as all hardware, software, and netware customization is performed by the OEM.

**Q.3. Answer Any Three of following**

15 Marks

**1. What are the sources of reservation?**

Sources of Reservations: Request for room reservation may come from number of sources by a prospective guest. Commonly, the sources of reservation are as follows:

- a. Personal approach: If the guests are free individual traveler or chance guests, they may directly give their reservation to the hotel.
- b. Travel agent: Travel agent may make reservation for groups at a hotel
- c. Companies: The companies may book rooms or other services for their visitors or clients in a hotel.
- d. Airlines: Various Airlines may book a hotel for their regular crews or clients in case of cancellation of onward flights.
- e. Embassies: The embassies also provide a large business to a hotel booking for the delegations.
- f. NGO/INGO: These organisations also book a hotel directly.

Government offices: They can be a good source of income to a hotel as they conduct conference and seminars hosted by the government

**2. What is CRS? Explain 5 functions of CRS.**

**Central Reservation Systems**

Vacation travelers, business travelers, corporate travel offices, and international visitors are all able to use the web to arrange for their own travel and accommodation needs. The variety of potential guests accessing Internet sites to place reservations has prompted travel and hospitality companies to develop simple, user-friendly reservation procedures. Large and small hotels alike have a presence on the Inter- net. One of their most important tools is the central reservation system.

Increased online interaction between hotel property management systems, central reservation systems, and electronic distribution channels decentralizes the reservation function but centralizes marketing and sales efforts in relation to the reservations process. This results in greater control of reservations

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**STATEMENT OF DISTRIBUTION OF CASH**

PARTICULARS	CASH	TOTAL CLAIM	GST	CRS	B/P	ALLEN	BORDER	TAYLOR
Balance	130000	1530000	60000	80000	40000	640000	340000	370000
Less: Estimated Real.Exp.	20000							
Less: GST Paid	60000	60000	60000					
Less: Paid to Creditors & BP	50000	50000		33333	16667			
Balance	-	1420000	-	46667	23333	640000	340000	370000
1 <sup>st</sup> Realisation	300000							
Less: Paid to Creditors & BP	70000	70000		46667	23333			
Less: Taylor for UEC	50000	50000						50000
Less: Allen & Taylor for EC	180000	180000				120000		60000
Balance	-	1120000				520000	340000	260000
2 <sup>nd</sup> Realisation	760000							
Less: Allen & Taylor for EC	270000	270000				180000		90000
Less: Paid to all Partners	490000	490000				196000	196000	98000
Balance	-	360000				144000	144000	72000
3 <sup>rd</sup> Realisation	440000							
Add: Withdrawn from bank	180000							
Add: Amt. not spent(Exp)	6000							
Less: Paid to all Partners	626000	626000				250400	250400	125200
Profit on Realisation	-	266000				106400	106400	53200

Q.4. [A]

**CONVERSION OF A PARTNERSHIP FIRM INTO A LIMITED COMPANY**

[15 MARKS]

**CALCULATION OF PURCHASE CONSIDERATION**

PARTICULARS	AMOUNT
<u>Assets taken over at Agreed Value</u>	
Land & Building :	280000
Plant & Machinery	120000
Furniture & Fixtures	10000
Inventories	60000
Goodwill	64400
Sundry Debtors	187200
Bank	58400
	780000
<u>Less :- Liabilities at Agreed Value</u>	
Sundry Creditors	180000
	600000

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handling at the property level and increased sales efforts across various distribution channels on behalf of the participating properties.

#### **CRS Function and Services:**

Fully flexible and scalable for growing business. Platform which is easier to use. Manageability of rates, availability and content or information from single point of entry.

Central reservation system is a computerized system that revolves around storage and distribution of information concerning resorts, hotels and host of lodging facilities.

Hotel CRS as a tool is used to reach the global distribution system or GDS along with internet distribution system from a single point system. Hotel managers use this tool to manage their online sales and marketing avenues. They also project their rates and availabilities which are easily viewable by the sales channel i.e. the online travel agencies team aligned with CRS.

Connectivity of hotels to GDS, online travel agents as well as mobile booking engines. Multiple distribution channels emphasized with channel manager usage.

Information is stored in Hotel CRS. Information includes room types, room rates, conditions, inventories, plan rate architecture, reservation information, graphical information in the form of video, pictures and detailed hotel information like address, phone and fax numbers and geographical code information.

Hotel CRS reporting module is very important and calls for a number of standard reports. System reports are those reports which can be run daily, weekly, monthly or yearly and sometimes on need based request. Some of the basic reports include for expected arrivals, reservation, property forecasting, property details, agent activity and daily booking activity summary

Central reservation services are provided by the central reservation office (CRO). The CRO manages room rate and availability information from participating properties. Information from connected properties is typically sent over communication lines and enters the database directly. In a CRS network configuration, the responsibility and control of room and rate information lies at the property level. The key to successful central reservation management is that the individual properties and the central system have access to the same room and rate availability information in real time. When this is the case, the system is able to confirm room rates and availability at the time of reservation.

The timely transfer of reservation confirmations from a CRS to individual properties is vital. Many chain systems provide multiple delivery alternatives to ensure that properties receive all new reservations, modifications, or cancellations. For example, most central reservation systems relay processed transactions to member properties through online interfaces. Although online interfacing between central reservation offices and property-level systems is fast and effective, some networks may also e-mail or fax the information to properties to ensure successful completion of the reservation process.

The goals of a CRS are to improve guest service while enhancing profitability and operating efficiency. A CRS accomplishes these goals by:

- Providing access to special room rates and promotional packages.
- Instantly confirming reservations.
- Communicating with major airline, travel, and car rental agencies.
- Creating comprehensive reservation records.

### **3) What is room management module? Explain the reports generated from room management module.**

The rooms management module is an important information and communications branch within a PMS. It is primarily designed to strengthen the communication links between the front office and the

housekeeping department.

A rooms allotment report summarizes rooms committed (booked or blocked) by future date. One type of expected arrival/departure report is shown in Exhibit below. A registration progress report provides the rooms department with a summary of current house information. The report may list present check-ins, the number of occupied rooms, names of guests with reservations who have not yet registered, and the number of rooms available for sale. A registration progress report may also profile room status, rooms revenue, and average room rate. A rooms activity forecast provides information on anticipated arrivals, departures, stayovers, and vacancies. This report assists managers in staffing front desk and housekeeping areas. An actual departures report lists the names of guests who have checked out and their room numbers, billing addresses, and folio numbers.

A housekeeper assignment report is used to assign floor and room numbers to room attendants and to list room status. This report may also provide space for special messages from the housekeeping department. System-generated housekeeper productivity reports provide productivity information for each housekeeper by listing the number of rooms cleaned and the amount of time taken to clean each room.

**4) Which printers are used in computerised POS?**

Printer types may include (explanation in own words):

- Guest Check Printers
- Receipt printers
- Workstation units
- Journal printers

**5) What are different types of folios created by room management and guest accounting system? Explain in brief.**

Common types of electronic folios include: (explain in own words)

- Individual folios.
- Master folios.
- Non-guest folios (city accounts).
- Employee folio
- Control folios.
- Semipermanent folios.
- Permanent folios.

**6) Explain in short POS order entry units. (explanation in own words):**

POS order entry units may be touch screen or composed of keyboards and monitors. POS order entry units primarily consists of Keyboard and Monitors

Key types may include:

- Preset Keys (or Screen Icons)
- Price look-up Keys (or Screen Icons)
- Functions Keys
- Settlement Keys
- Modifier Keys

- Customer display Unit
- Touchscreen terminals
- Self-Service Order Entry
- Handheld terminals

**Q.4. Answer Any Three of following**

15 Marks

**1. What are the fields included in ingredient file data?**

An ingredient file contains important purchase, storage, and usage data on each purchased ingredient. The ingredient file is often referred to as the food item data file (FIDF). Data may include:

- Ingredient code number.
- Ingredient description.
- Purchase unit (how a product arrives at the property).
- Purchase unit cost.
- Issue unit (how a product is tracked in the storeroom).
- Issue unit cost.
- Recipe unit (how a product is used in recipes).
- Recipe unit cost.

**2. What are Stars, Plow horses, Dogs and Puzzles.**

A menu engineering analysis produces the following classifications:

- Menu items high in both MM and CM are stars (winners).
- Menu items high in MM but low in CM are plowhorses (marginal).
- Menu items low in MM but high in CM are puzzles (potential).
- Menu items low in MM and low in CM are dogs (losers).

The application goes a step further and identifies practical approaches by which to re-engineer the next menu to be more successful in terms of profitability and sales activity. For example, simple strategies include:

- Retain stars
- Reprice plowhorse
- Reposition puzzles
- Remove dogs

**3. What sales report are generated by F&B management sales ?**

Sales Analysis

A POS system can store files that contain important data regarding daily food service operations. The sales analysis software can then process this combined data into numerous reports to help management monitor and control operations in such specific areas as:

- ❖ Menu planning.
- ❖ Sales forecasting.
- ❖ Menu item pricing.
- ❖ Ingredient purchasing.

- ❖ Inventory control.
- ❖ Labor scheduling.
- ❖ Payroll accounting.

Sales figures can be entered manually or imported from a pas system. The program calculates food cost and depletes inventory amounts accordingly. Food service management systems typically produce a variety of sales reports. A daily sales report summarizes all sales revenue activity for a day. Revenue is itemized by the following categories:

- ❖ Net sales
- ❖ Tax
- ❖ Number of covers (customer served)
- ❖ Revenue per check
- ❖ Revenue per cover
- ❖ Sales category
- ❖ Day-part totals

In addition, affected general ledger accounts are listed, and associated food costs and sales percentage statistics are noted. A weekly sales spreadsheet provides a weekly summary of information contained in daily sales reports.

#### 4. Explain Catering softwares

##### Catering Software

While catering is similar in many ways to traditional restaurant operations, there are unique characteristics that are addressed by targeted software applications. There are two types of catering for which software applications have been developed: off-premises catering and finished product (or home delivery) catering.

##### Off-Premises Catering

There are many details involved in the proposal, planning, and execution stages of an off-premises catering activity. Initially, the caterer suggests a standard menu or set of menus to a client for consideration. The client either selects from available offerings or requests a special meal plan. In either case, the caterer develops a proposal for the function.

Caterers are responsible for food and beverage service and may also be contracted to provide furnishings, entertainment, decorations, and the like. Before an event, the caterer typically plans for necessary purchases, personnel, production, transportation, service, and rental equipment. Generally, the caterer arrives at a catered event with all these requirements, because supplemental equipment, product replenishment, and additional staff are usually not available at the catered site.

Catering software monitors and controls the activities associated with each stage of off-premises catering service. Many of the files created through the use of catering software packages perform functions similar to automated restaurant management applications. Typical files contained in a catering software package include:

- Ingredient file (FIDF).
- Recipe file (RIDF).
- Menu item file (MIDF).
- Proposal/contract file.

- Inventory file.
- General accounting files.

**5. Write in brief about the functions of Hotel Sales Office Automation.**

Sales and catering application software can:

- Accomplish manually tedious tasks quickly and efficiently.
- Access sales information rapidly.
- Facilitate personalized mailings through database marketing.
- Reduce data-handling errors.
- Decrease staff training costs by implementing standardized procedures.
- Access customer profile information for targeted promotions.
- Enhance communication linkages among affiliated properties

**6. What is Banquet Event Order and Group Guestroom sales in automated sales application?**

Group Guestroom Sales

In most non-automated sales offices, a guestroom control book is used to monitor the number of guestrooms committed to groups. Since front desk, reservations, and sales office employees are capable of booking guestroom business, it is important that all personnel be aware of timely and accurate group allotments to avoid overbooking.

Properties often implement revenue management strategies designed to maximize rooms revenue by establishing a desired mix of group, tour and travel, and individual guest business for specific time periods. Typically, a guestroom control book is used to guide guestroom booking activity by providing the sales office with the maximum number of guestrooms it can sell to groups on a given day. This quota is usually set by hotel management in consultation with the hotel's marketing and sales department. The remaining guestrooms (and any unsold guestrooms allotted to groups) become available for individual guests. In general, these guestrooms will be sold by front desk and reservations staff at higher rates than they would be sold to groups.

Banquet Event Order :

Information from the function book and other files for events involving food or beverage service is eventually transcribed onto a banquet event order (BEO) form. Since a BEO generally serves as a final contract for the client and as a work order for the catering department, problems may arise should the function book contain inaccurate or incomplete information.

Automated sales office systems generate a BEO record as information is gathered and input into a client's account file. Advanced sales and catering software packages are generally able to supplement information contained in a BEO. For example, for a specific date or range of dates, an automated sales system can produce aggregated kitchen production reports (listing all menu items needed by preparation area), facility setup reports (listing all resource items requested for current events), and revenue forecast reports (based on anticipated revenue derived from business described on BEOs).

**Q.5. Answer Any Three of following**

**15 Marks**

**1) Explain the steps of property level reservation system**

The five steps of PLRS include: (explain in own words)

- Reservation inquiry.

- Determination of availability.
- Creation of the reservation record.
- Confirmation of the reservation.
- Maintenance of the reservation record.
- Generation of reports.

2) **Briefly explain any 5 room statuses of automated room management system.**

The different room statuses are : (explain briefly any five)

- Occupied
- Complimentary
- Stayover
- Do not disturb
- On-change
- Sleep-out
- Sleeper
- Skipper
- Vacant and ready
- Out-of-order
- Lock-out
- DNCO
- Due ou
- Check out
- Late check-out

3. **What reports are generated by PMS reservation system .**

The different reports can be:

- Reservation Transaction report
- Turnaway statistics report
- Check in/Check out report
- Room revenue report
- Weekly confirmed reservation report
- Registration progress report

4. **Explain the 4 functions of Room management module.**

Most rooms management modules perform the following functions (explain briefly in own words)

- Identify current room status.
- Assist in room and rate assignments.
- Provide in-house guest information.
- Organize housekeeping activities.
- Generate timely reports for management

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5. **What is acceptance testing for of an application ?**

Before adopting or upgrading an application, management should conduct extensive acceptance testing of the candidate technology. Acceptance testing involves more than simply checking whether the application works. Tests should be developed to determine whether automated operations function according to standards defined by management. Fundamental areas of acceptance testing include:

- Hardware efficiency.
- Software reliability.
- Data integrity.
- Network security.

6. **What is "high warning flag" in automated Food and Beverage management system?**

A limited number of ingredients can be listed for each standard recipe. A popular feature of a recipe record is the "high warning flag," which signals when the current food cost exceeds a predetermined level of concern as set by management. Recipe records are integral to purchase order systems, because stored recipes can indicate needed quantities for projected production and provide an index of perpetual inventory replenishment following production.

