

ROLL No.....

NATIONAL COUNCIL FOR HOTEL MANAGEMENT
AND CATERING TECHNOLOGY, NOIDA
ACADEMIC YEAR - 2013-2014

COURSE : 1st Semester of 3-year B.Sc. in H&HA
SUBJECT : Hotel Engineering
TIME ALLOWED : 03 Hours MAX. MARKS: 100

(Marks allotted to each question are given in brackets)

- Q.1. What is maintenance and scope of maintenance in a hotel? Describe.
OR
Name fuels used in hotel. What are the advantages and disadvantages of solid, liquid and gaseous fuels?
(2+8=10)
- Q.2. Describe LPG and draw a labelled diagram of Bunsen burner.
(10)
OR
What is fuse? What is its importance? Explain various types of fuses used in electric circuit?
(2+3+5=10)
- Q.3. What are different water distribution systems? Write about Zeolite process with diagram.
OR
Discuss the basic scientific principles behind refrigeration.
(10)
- Q.4. Classify fires. Write about different types of fire extinguishers.
OR
What are the types of air-conditioners? Explain the central air-conditioning system.
(3+7=10)
- Q.5. Write short notes on **any two** of the following:
(a) Accident and Safety Management
(b) Equipment Replacement Policy
(c) Contract Maintenance
(d) Walk-In Freezers
(2x5=10)

- Q.6. Explain in brief (**any ten**):
(a) B.T.U. (b) Preventive maintenance
(c) Flame spread (d) Incandescent lamp
(e) Insulators (f) Escalators
(g) Sullage (h) Flash point
(i) Class C Fire (j) Humidification
(k) r22 (l) Elbow
(10x1=10)
- Q.7. (a) Explain any two types of pollution.
(b) List the process of sewage treatment.
(5+5=10)
- Q.8. List and explain various Audio visual equipment used in hotels.
(10)
- Q.9. Calculate the electricity bill for the month of April 2011 having the following electric loads:
60W bulbs 10 Nos. 6 hrs/day
60W fans 10 Nos. 5 hrs/day
3 KW heater 03 Nos. 4 hrs/day
750W iron 02 Nos. 3 hrs/day
6KW boiler 01 No. 3 hrs/day
Cost of electric energy is ₹3/- per unit.
(10)
- Q.10. State true or false:
(a) Corrective maintenance is done after breakdown.
(b) L.P.G. is a mixture of methane and butane.
(c) Good or Ideal fuel has low ignition point.
(d) Fuse can be used as switches.
(e) Copper conductor is always tinned in V.I.R. cables.
(f) The main disadvantage of hard water is bad taste.
(g) Refrigerator cools the room.
(h) Fire is an effect of fuel, heat and oxygen.
(i) Switches are always connected with wire neutral.
(j) C.P.U. stands for Control Processing Unit.
(10x1=10)

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NATIONAL COUNCIL FOR HOTEL MANAGEMENT
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ACADEMIC YEAR – 2014-2015

COURSE : 1st Semester of 3-year B.Sc. in H&HA
SUBJECT : Hotel Engineering
TIME ALLOWED : 03 Hours MAX. MARKS: 100

(Marks allotted to each question are given in brackets)

- Q.1. (a) Mention **ten** important duties and responsibilities of Chief Engineer of a hotel.
(b) Describe briefly the complaint register-cum-work order system of fault rectification.
(5+5=10)

- Q.2. Calculate the amount of electricity bill for the month of April 2013 for the following electric load, if the cost of electric energy is ₹/- per kilowatt hour.

100 W electric lamps	80 Nos.	6 hrs./day
1.5 KW electric heater	2 Nos.	8 hrs./day
3 KW air conditioner	8 Nos.	8 hrs./day
5 KW boiler	1 No.	6 hrs./day

(10)

OR

- (a) Discuss the role of fuse in a circuit.
(b) Discuss why earthing is important for an electrical appliance?

(5+5=10)

- Q.3. State two scientific principles used in refrigeration. With the help of a neat sketch, explain the vapour compression cycle of refrigeration.

OR

Describe the installation, commissioning, proper use and care of an air-conditioner.

(10)

- Q.4. (a) Mention **ten steps** that should be taken to make a hotel more fire-safe.
(b) Classify different fires. Prepare a table showing different extinguishers used for different types of fire.
(5+5=10)

- Q.5. Discuss the types of hardness of water. State the disadvantages of using hard water in hotels.

- Q.6. Discuss different types of pollution related to a hotel.
(5+5=10)
(10)

- Q.7. Write short notes (**any two**):
(a) Precautions for installation of gas bank.
(b) Discuss types of fuels used in catering industry.
(c) Preventive measures for slips & falls.
(d) Necessity for contract maintenance.
(2x5=10)

- Q.8. Explain in brief (**any five**):
(a) B.T.U. (b) Open circuit
(c) Methods of heat transfer (d) Fluorescent lamp
(e) Solid & liquid waste (f) Automatic fire detector
(g) Group replacement
(5x2=10)

- Q.9. A Choose the appropriate option:
(i) Measurement of light is given in:
(a) Joules (b) Volts (iii) Lumens (iv) Ampere
(ii) In chilled water air conditioning applications, the temperature of chilled water is maintained at:
(a) 0°C (b) 7-20°C (iii) 15°C (iv) 5-5°C
(iii) Paying money one time to repair 10 faulty water taps is a:
(a) Lumpsum contract (b) Annual contract
(c) Monthly contract (d) Cost plus contract
(iv) Heat is absorbed by a refrigerator during refrigeration cycle in:
(a) Condenser (b) Compressor
(c) Evaporator (d) Throttle valve
(v) In India the single phase voltage for domestic supply is:
(a) 220-240 Volt (b) 110-130 Volt
(c) 380-415 Volt (d) 415-460 Volt

B Explain:

- (a) AC and DC (b) Calorific value of fuel
(c) One ton of refrigeration (d) Preventive maintenance
(e) MCB

(5+5=10)

- Q.10. List and explain use of security equipment in hotel industry.

OR

Explain the reason under which equipment are replaced.

(10)

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NATIONAL COUNCIL FOR HOTEL MANAGEMENT
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ACADEMIC YEAR – 2015-2016

COURSE : 1st Semester of 3-year B.Sc. in H&HA
SUBJECT : Hotel Engineering
TIME ALLOWED : 03 Hours MAX. MARKS: 100

(Marks allotted to each question are given in brackets)

- Q.1. What is LPG? Explain its advantages and dis-advantages.
OR
What are the precautions to be taken while using gas? (10)
- Q.2. Draw an organizational chart of maintenance department of a 500 room hotel.
List **five** important responsibilities of a Chief Engineer. (10)
- Q.3. Explain various classes of Fire and also mention types of extinguishers used. (10)
- Q.4. What are the different ways in which hard water can be treated for further use? (10)
- Q.5. Write short notes on **any two**:
(a) Sensor
(b) Methods of Waste Disposal
(c) Air conditioning and refrigeration
(d) Base exchange method (2x5=10)
- Q.6. (a) Discuss the role of fuse in an electric circuit.
(b) What is the role of an insulator in electricity?
OR
Explain the circumstances under which equipment are replaced. (10)
- Q.7. What is Green hotel? What are the different ways to control pollution in hotels?
OR
What are the different types of maintenance? List the advantages and dis-advantages of contract maintenance. (10)

- Q.8. I Write the full form of the following (**any five**):
(a) HWC (b) BTU
(c) CHU (d) CVGR
(e) HACCP (f) J
(g) CFC
- II Discuss care and cleaning of audio-visual equipment in hotels. (5+5=10)
- Q.9. Explain vapour compression system of refrigeration. (10)
- Q.10. Calculate the electricity bill for December 2014 for the following appliances:
Tariff: Rs.5/- per unit
- | | | |
|--------------------|---------|------------|
| (a) 1000W bulb | 10 nos. | 8 hrs./day |
| (b) 1.5 KW heater | 2 nos. | 4 hrs./day |
| (c) 1.5 KW A.C. | 1 no. | 4 hrs./day |
| (d) 40W tube light | 10 nos. | 8 hrs./day |
- (10)

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NATIONAL COUNCIL FOR HOTEL MANAGEMENT
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ACADEMIC YEAR – 2016-2017

COURSE : 1st Semester of 3-year B.Sc. in H&HA
SUBJECT : Hotel Engineering
TIME ALLOWED : 03 Hours MAX. MARKS: 100

(Marks allotted to each question are given in brackets)

- Q.1. (a) Draw an organisation chart of maintenance department of a 200 room hotel.
(b) Discuss in brief duties and responsibilities of maintenance department.
(5+5=10)

- Q.2. Define the term air-conditioning. State **two** scientific principles used in refrigeration. State the difference between refrigeration and air-conditioning.
(2+4+4=10)

OR

Explain different types of fuses used in electrical circuit. Describe briefly safety precautions to be observed while working on electrical appliances.
(5+5=10)

- Q.3. Write short notes on **any two** of the following:
(a) Methods of heat transfer
(b) Types of wiring
(c) Audio-visual equipment used in the hotel
(d) Maintenance of swimming pool
(2x5=10)

- Q.4. With a neat sketch, explain the functioning of a gas burner.
OR
(10)

Write short notes on;
(a) Contract maintenance
(b) Care and maintenance of Audio-Visual equipment used in a conference room
(5+5=10)

- Q.5. Enumerate the differences and similarities between window and central air-conditioning. Describe care and maintenance of deep freezer.

OR

Write short notes on;
(a) Preventive measures for slips and falls (b) Security equipment in hotels
(5+5=10)

- Q.6. Describe in detail all the different types of fire extinguishers and their uses.
(10)

- Q.7. Describe briefly various types of pollution caused by the hospitality industry.
(10)

- Q.8. Explain how hot water is supplied throughout a hotel using central indirect system.
(10)

- Q.9. Define the following (**any ten**):
(a) Preventive maintenance (b) Class C fire
(c) KWH (d) Open circuit
(e) MCB (f) Earthing
(g) Energy Audit (h) Group replacement
(i) Scale formation (j) BTU
(k) Humidification (l) One of refrigeration
(10x1=10)

- Q.10. A Fill in the blanks:
(i) Air is _____ than liquefied petroleum gas.
(ii) Calorific value of LPG is _____ than calorific value of coal.
(iii) One calorie is equal to _____ British Thermal Units.
(iv) One ton of refrigeration means cooling by extracting heat at the rate of _____ kilo calories per hour.
(v) Lignite is an example of _____ fuel.

B State True or False:

- (i) Temporary hardness of water can be removed by boiling the water.
(ii) LPG consists of butane and hexane.
(iii) Lighting fan sub-circuits are meant to carry electric current not exceeding 6 amperes.
(iv) Soda acid fire extinguishers are used to extinguish oil fires.
(v) Refrigerators working on vapour absorption cycle require less maintenance.
(5+5=10)

ROLL No.....

NATIONAL COUNCIL FOR HOTEL MANAGEMENT
AND CATERING TECHNOLOGY, NOIDA
ACADEMIC YEAR – 2017-2018

COURSE : 1st Semester of 3-year B.Sc. in H&HA
SUBJECT : Hotel Engineering
TIME ALLOWED : 03 Hours MAX. MARKS: 100

(Marks allotted to each question are given in brackets)

Establish the importance of maintenance department for the hotel in providing better services to the guests. (10)

Explain the importance of any five modern day equipment used by hotel for security of guests and property. (10)

Describe various methods of distribution of water in a hotel.

OR

Calculate the electricity bill of a coffee shop of a five star hotel for September 2017. Cost of electric energy is Rs.5/- per unit:

Device	Electric power	Quantity	Usage (per day)
Bulb	60 watt	50	20 hrs.
Coffee machine	1 kilo watt	1	12 hrs.
Ice maker	3 kilo watt	1	15 hrs.
Toaster	250 watt	2	4 hrs.
Bar blender	500 watt	2	10 hrs.
Air conditioner	2 kilo watt	5	20 hrs.

(10)

Write short notes on:

- (a) Cost plus fixed percentage contract
- (b) Reasons for replacement of equipment

OR

Discuss various electrical lighting devices used in hotels, mentioning their advantages and other features.

(10)

Q.5. Define noise pollution. What are the effects of noise pollution? How noise pollution can be controlled in a hotel? (2+4+4=10)

Q.6. With the help of a neat sketch, explain the Base Exchange Method for the removal of permanent hardness of water.

OR

Explain Vapour Compression Refrigeration Cycle.

Q.7. What do you understand by the term 'Audio Visual Equipment'? List the various audio visual equipment provided to the guest by a hotel. Prepare a maintenance program for any audio visual equipment.

OR

Differentiate between Elevator and Escalator. Write a few common reasons accidents related to elevators. What safety features are included in hotels elevators for the safety of the guest?

Q.8. What precautions should be observed by a banquet chef while using pressure gas burners?

Q.9. Define the following in one or two lines (any ten):

- (a) PVC (b) Insulator (c) Class 'B' Fire
- (d) Conduction (e) Rubbish (f) Relative humidity
- (g) HVAC (h) Thermostat (i) Ignition temperature
- (j) Insulators (k) Soft water (l) Routine maintenance

Q.10. Match the following:

- (a) Sound (i) Watt
- (b) Fuel (ii) Celsius
- (c) Energy (iii) Ppm
- (d) Temperature (iv) Lux
- (e) Air conditioning (v) Btu
- (f) Hardness of water (vi) Decibel
- (g) Power (vii) Kwh
- (h) Electricity (viii) Watt/sec
- (i) Illumination (ix) Kcal
- (j) Heat (x) Kcal/kg

NATIONAL COUNCIL FOR HOTEL MANAGEMENT
AND CATERING TECHNOLOGY, NOIDA
ACADEMIC YEAR – 2018-2019

COURSE : 1st Semester of 3-year B.Sc. in H&HA
SUBJECT : Hotel Engineering
TIME ALLOWED : 03 Hours MAX. MARKS: 100

(Marks allotted to each question are given in brackets)

- Q.1. Classify and prepare a table showing comparative study of solid, liquid and gaseous fuels with examples. (10)
- Q.2. Define electric circuit. What are the various types of electric circuit? Describe.
OR
Explain the functioning of MCB. State reasons for placing switches on livewire side. (5+5=10)
- Q.3. Explain the principles and functioning of Bunsen burner. List five properties of LPG.
OR
(a) What is contract? State essential requirements of a contract.
(b) List advantages and dis-advantages of contract maintenance. (5+5=10)
- Q.4. List three characteristics of hard water. What are the various ways to remove hardness of water? (3+7=10)
- Q.5. Describe various classes of fires. Explain the methods of extinguishing fire. (5+5=10)
- Q.6. Explain the stages of sewage treatment. What preventive measures can be adopted to control water pollution? (10)
OR
Explain the factors which influence the replacement of equipment. (10)
- Q.7. What are the important gadgets useful in the process of providing security solutions for hotel industry?
OR
What steps should be taken by hotel to prevent slip and falls? (10)
- Q.8. Write short notes on any two of the following:
(a) Care and maintenance of refrigerators
(b) Sensors
(c) Importance of maintenance department
(d) Audio visual equipment (2x5=10)
- Q.9. Explain in brief (any ten):
(a) Manifold (b) Illumination (c) Modem
(d) Escalator (e) Fire point (f) Refrigerant
(g) Ampere (h) Defrosting (i) Ohm's law
(j) Dew point (k) Venturi effect (l) Diffused lighting (10x1=10)

- Q.10. A Write the full form of the following:
(i) DVR (ii) HSD
(iii) VIR (iv) ETP
(v) CFC

- B Fill in the blanks:
(i) Temporary hardness of water is caused by _____ of calcium and magnesium.
(ii) An ideal fuel has _____ ignition point.
(iii) Light is measured in terms of _____.
(iv) LPG is a mixture of methane and _____.
(v) Anthracite is an example of _____ fuel. (5+5=10)

HE/DEC/ODD/18-19/01/NC

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