

ASSISTANT TRANSPORT OFFICER,KSRTC

EXAM DATE:07-01-2016

1.A positive value of Joule Thomson coefficient of a fluid means:

- A.Temperature drops during throttling*
- B.Temperature remains constant
- C.Temperature rises during throttling
- D.None of the above

Ans:A

2.Dew point temperature is the temperature at which condensation begins when the air is cooled at constant:

- A.Temperature
- B.Entropy
- C.Pressure*
- D.Enthalpy and Volume

Ans:C

3.A sample of ambient air(at 35°C ,75% relative humidity, $p=0.042$ bar,and standard atmosphere pressure),the amount of moisture in kg per kg of dry air will be approximately:

- A.0.2
- B.0.27
- C.0.027*
- D.0.85

Ans:C

4.Usually in the window air conditioner,the expansion device used is:

- A.Capillary tube*
- B.Thermostatic expansion valve
- C.Gate valve
- D.None of the above

Ans:A

5.For air with a relative humidity of 80%:

- A.Drybulb temperature is less than the wet bulb temperature
- B.Dew point temperature is less than wet bulb temperature*
- C.Dew point and wet bulb temperature are equal
- D.None of the above

Ans:B

6.The density of water at one atmosphere pressure and 30°C is approximately:

- A.1.0 kg/m³
- B.100.0 kg/m³
- C.500.0 kg/m³
- D.1000.0 kg/m³*

Ans:D

7.Oil flows through a 200 mm diameter horizontal pipe with friction factor $f=0.022$ and length 500 m.The Volumetric flow rate is 0.2 m³/s.The head loss due to friction in meters is(assume $g=9.8 \text{ m/s}^2$):

- A.12.4 m
- B.1010.1 m
- C.522.7 m

D.116.3 m*

Ans:D

8.For the stability of a floating body,under the influence of gravity alone,which of the following is TRUE?

- A.Metacenter should be below centre of gravity
- B.Metacenter should be above centre of gravity*
- C.Metacenter and centre of gravity must lie on the same horizontal line
- D.None of the above

Ans:B

9.A phenomenon is modeled using n dimensional variables with m primary dimensions.The number of non-dimensional variable is:

- A.n-m*
- B.n
- C.nm
- D.n+m

Ans:A

10.The continuity equation is derived based on fundamental principle of:

- A.Law of conservation of energy
- B.Law of conservation of momentum
- C.Law of conservation of mass*
- D.All of the above

Ans:C

11.For a Newtonian fluid:

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- A.Shear stress is proportional to acceleration
- B.Rate of shear stress is proportional to shear strain
- C.Shear stress is proportional to density
- D.Shear stress is proportional to rate of shear strain*

Ans:D

12.A venturimeter is used to measure:

- A.Density
- B.Pressure
- C.Discharge*
- D.None of the above

Ans:C

13.The SI unit of Kinematic viscosity is:

- A. m^2/s^*
- B. kg/m
- C. m/s^2
- D. m/s

Ans:A

14.A static fluid can have:

- A.Positive normal and shear stress
- B.Negative normal stress and Negative shear stress
- C.Zero normal stress and zero shear stress
- D.Positive normal stress and zero shear stress*

Ans:D

15.For a laminar flow through a circular pipe,Reynolds number will be:

- A.More than 5000
- B.More than 4500
- C.Less than 2000*
- D.None of the above

Ans:C

16.Two diffuse gray parallel plates,separated by distance,have surface temperatures of 127°C and 27°C .If the emissivity of the surface are 0.8 and the Stefan-Boltzmann constant is $5.67 \times 10^{-8} \text{W/m}^2\text{K}^4$,the net radiation heat exchanges rate in W/m^2 between the two plates is:

- A.0.6
- B.66.1
- C.661*
- D.6600

Ans:C

17.In a condenser of a power plant,the steam condenses at temperatures of 50°C .The cooling water enters at 20°C and leaves at 35°C .The logarithmic mean temperature difference(LMTD)of the condenser is:

- A. 11.6°C
- B. 26.6°C
- C. 0°C
- D. 21.6°C *

Ans:D

18.A fin efficiency is defined as:

- A.Actual heat transfer rate from the fin/ideal heat transfer rate from the fin/ideal heat transfer rate from the fin*
- B.Ideal heat transfer rate from the fin
- C.Heat transfer rate from the fin/Heat transfer without fin
- D.All of the above

Ans:A

19.Thermal conductivity of pure Copper at room temperature is approximately:

- A.38W/m.K
- B.9W/m.K
- C.398 W/m.K*
- D.3285 W/m.K

Ans:C

20.Critical radius of insulation for cylindrical body is (if k is the thermal conductivity of insulation and h is convection heat transfer coefficient):

- A.h/k
- B.k/h*
- C.2 k/h
- D.2h/k

Ans:B

21.The Log Mean Temperature Difference(LMTD)of a double pipe heat exchanger will be usually:

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- A.Greater for parallel flow heat exchanger than for counter flow heat exchanger
- B.Greater for counter flow heat exchanger than for parallel flow heat exchanger*
- C.Same for both parallel and counter flow heat exchangers
- D.All of the above

Ans:B

22.The crank radius of a single cylinder I.C.engine is 50 mm and the diameter of the cylinder is 70mm.The swept volume of the cylinder in cm^3 is:

- A.38
- B.385*
- C.3021
- D.3603

Ans:B

23.In an air-standard Otto-cycle,the compression ratio is 10.The condition at the beginning of the compression process is 100 kPa and 300K.Heat added at constant volume is 1500 kJ/kg,while 700 kJ/kg of heat is rejected during the other constant volume process in the cycle.Specific gas constant for air= 0.287 kJ/kgK .The mean effective pressure(in kPa)of the cycle is:

- A.1032*
- B.318
- C.1515
- D.403

Ans:A

24.Which one of the following is a necessary assumption for the air-standard Otto cycle?

- A.All processes are adiabatic
- B.Intake and exhaust processes are constant pressure heat rejection processes
- D.The combustion process is isothermal heat addition process
- D.The working fluid is an ideal gas with constant specific heats*

Ans:D

25.The stroke and bore of a four stroke SI engine are 250mm and 200 mm respectively.The clearance volume is 0.001 m^3 .If the specific heat ratio is 1.4,the air-standard cycle efficiency of the engine is:

- A.41.40%
- B.46.40%
- C.58.20%*
- D.82.80%

Ans:C

26.A Carnot cycle is having an efficiency of 0.78.If the temperature of 0.78.If the temperature of the high temperature reservoir is 1241 K,what is the temperature of low temperature of low temperature reservoir?

- A. 0°C *
- B.0 K
- C. 273°C
- D.100 K

Ans:A

27.A solid circular shaft transmits a torque of 80 Nm.If the allowable shear stress of the material is 150 MPa,assuming a factor of safety of 2,the minimum allowable design diameter in mm is:

- A.12 mm
- B.8 mm
- C.82 mm
- D.18 mm*

Ans:D

28.A clutch has outer and inner diameters 10 cm and 4 cm respectively.Assuming a uniform pressure of 2×10^6 Pa and coefficient of friction of liner material is 0.4,the torque carrying capacity of the clutch is:

- A.118 Nm
- B.196 Nm*
- C.562 Nm
- D.390 Nm

Ans:B

29.The most appropriate description of a Helical gear is:

- A.Axes parallel and teeth are inclined to the axis*
- B.Axes non parallel and non-intersecting
- C.Axes are perpendicular and used for large speed reduction
- D.None of the above

Ans:A

30.For Rack and Pinion:

- A.Axes non parallel and non-intersecting
- B.Axes parallel and one of the gears has infinite radius*
- C.Any of the above
- D.None of the above

Ans:B

31.Twenty degree full depth involute profited 21 tooth pinion and 39 tooth gear are in mesh.If the modue is 5 mm,the centre distance between the gear pair will be:

- A.140 mm
- B.250 mm
- C.280 mm
- D.150 mm*

Ans:D

32.Two mating spur gears have 40 and 120 teeth respectively.The pinion rotates at 900 rpm and transmits a torque of 25 Nm.The torque transmitted by the gear is:

- A.75 Nm*
- B.750 Nm
- C.40 Nm
- D.400 Nm

Ans:A

33.The coupling used to connect two shafts with large angular misalignment is:

- A.Flange coupling

B.Oldham's coupling

C.Hooke's joint*

D.None of the above

Ans:C

34.When a shaft is subjected to repeated stress;then the shaft will be designed for:

A.Maximum compressive stress(static)

B.Maximum tensile(Static)

C.Maximum bending moment(Static)

D.Fatigue loading*

Ans:D

35.Large speed reductions(greater than 20)in one stage of a gear train are possible through:

A.Spur gearing

B.Worm gearing*

C.Bevel gearing

D.All of the above

Ans:B

36.An ideal gas of mass m and temperature T ,undergoes a reversible isothermal process from an initial pressure p_1 ,to final pressure p_2 .The heat loss during the process is Q .The entropy change of the gas is:

A. $mR \ln(p_2/p_1)$

B. $mR \ln(p_1/p_2)$ *

C. mrT_1

D.Zero

Ans:B

37.Heat and work are:

A.Path functions*

B.Intensive properties

C.Point functions

D.None of the above

Ans:A

38.If a closed system is undergoing an irreversible process,the entropy of the system:

A.Must decrease

B.Zero

C.Must increase*

D.Remain constant

Ans:C

39.A gas contained in a cylinder is compressed;the work required for compression is 3000 kJ.During the process ,I heat interaction of 500 kJ causes the surroundings to be heated.The changes in internal energy of the gas during the process is:

A.500 kJ

B.-3500 kJ

C.+3500 kJ

D.2500 kJ*

Ans:D

40.A 2000 W,25 liters water heater is switched on for 30 minutes.The heat capacity c_p for water is 4.2 kJ/kgK.Assuming all the electrical energy has gone for heating the water,increase of the water temperature in degree centigrade is:

A.10.7

B.34.3*

C.24.3

D.44.5

Ans:B

41.Who quotes “induction is the welcoming process to make the new employee feel at home and generate in him a feeling of belongingness to the organization”?

A.Michael Armstrong

B.Edwin B.Flippo*

C.Peter F.Drucker

D.Abraham Maslow

Ans:B

42.The tendency to evaluate a person on the basis of one trait or characteristic is the Phenmenon of:

A.Central Tendency

B.Leniency

C.Hallo Error*

D.Similarity Error

Ans:C

43.A situation in which the employees perceive too narrow a difference between their own pay and that of their colleagues:

- A.Pay secrecy
- B.Pay Compression*
- C.Pay Security
- D.None of these

Ans:B

44.Under which system of payment quality of goods can be ensured?

- A.Piece Rate System
- B.Time Rate System*
- C.Incentives
- D.None of these

Ans:B

45.Which of the following marketing concept is based on the development,design,and implementation of marketing programmes, processes and activities that recognizes their breadth and interdependencies:

- A.Relationship Marketing Concept
- B.Niche Marketing Concept
- C.Holistic Marketing Concept*
- D.Service Marketing Concept

Ans:C

46.Which of the following is a communication model that is used improve understanding between individuals?

- A.Kaizen
- B.Johari Window*
- C.Six Sigma

D.Hot Stove Rule

Ans:B

47.A tool for identifying key activities that create value and costs in a specific business is called:

- A.Supply Chain
- B.Value Chain*
- C.Market Chain
- D.None of these

Ans:B

48.Who propounded two factor theory of motivation?

- A.Abraham Maslow
- B.Herzberg*
- C.David C.McLelland
- D.Mc Gregor

Ans:B

49.The term'Gherao' means:

- A.To prevent
- B.To surround*
- C.To block
- D.To disagree

Ans:B

50.A period of rapid market acceptance and substantial profit improvement has been happening at which point of product life cycle:

A.Introduction

B.Maturity

C.Growth*

D.Debate

Ans:C

51.-----motives persuade a person to buy products from a particular manufacturer or trader

A.Patronage Motives*

B.Product Motives

C.Internal Motives

D.Inherent Motives

Ans:A

52.The process of settling disputes through the intervention of a third party appointed by the government is:

A.Adjudication*

B.Conciliation

C.Voluntary Arbitration

D.Collective Bargaining

Ans:A

53.AIDA approach helps to plan sales presentations.What is AIDA stands for?

A.Attention,Interest,Desire,Action*

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B.Attitude,Interest,Development,Achievement

C.Attention,Interest,Direction,Assisting

D.Attitude,Integrity,Directing,Achievement

Ans:A

54.Point of Sale(POS)system is the characteristic feature of which type of marketing

A.Conventional Marketing

B.Service Marketing

C.Economic Marketing

D.Electronic Marketing*

Ans:D

55.The process of setting prices that have special appeal to target customers is:

A.Bait pricing

B.Full line pricing

C.Leader pricing

D.Psychological pricing*

Ans:D

56.Sometimes an employee is aggrieved not because of any valid or legitimate reason but because of a wrong perception,wrong attitude or wrong information.What form of grievance is this?

A.Imaginary grievance*

B.Disguised grievance

C.Factual grievance

D.None of these

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Ans:A

57.Which of the following is associated with Mc Gregor's Hot Stove Rule?

- A.Planning
- B.Motivation
- C.Communication
- D.Discipline*

Ans:D

58.A managerial device for defining and stimulating sales effort is:

- A.Sales Budget
- B.Market Forecast
- C.Market Demand
- D.Sales Quota*

Ans:D

59.Termination of services on disciplinary grounds,illness,retirement,winding up of a business does not constitute which of the following:

- A.Retrenchment*
- B.Suspension
- C.Dismissal
- D.Demotion

Ans:A

60.The perceived monetary value of the bundle of economic,functional,and psychological benefits customers expect from a given market offering is:

- A.Customer Perceived Value
- B.Customer Expected Price
- C.Total Customer Cost
- D.Total Customer Value*

Ans:D

61.The process of building,maintaining and using customer databases for the purpose of contacting,transacting,and building customer relationship is:

- A.Service Marketing
- B.Relationship Marketing
- C.Database Marketing*
- D.Meta Marketing

Ans:C

62.-----is the process of dividing buyers into different groups on the basis of personality traits,lifestyle, or values.

- A.Demographic Segmentation
- B.Geographic Segmentation
- C.Psychographic Segmentation*
- D.Behavioral Segmentation

Ans:C

63.Planning the infrastructure to meet demand,then Implementing and controlling the physical flows materials and final goods from points of

origin to points of use,to meet customer requirements at a profit is the process of:

- A.Market Research
- B.Market Logistics*
- C.Inventory Management
- D.Sales Estimation

Ans:B

64.Which of the following is not a characteristic feature of rural market?

- A.Seasonal demand
- B.Cultural diversity
- C.Scattered Market
- D.High income level*

Ans:D

65.Inventory means:

- A.Stock of materials in different forms*
- B.Stock
- C.Stock of goods
- D.Stock of goods and services

Ans:A

66.Green marketing is a part of

- A.Social marketing*
- B.Service marketing
- C.Relationship Marketing
- D.Rural Marketing

Ans:A

67.Which of the following is not an activity of physical distribution?

- A.Order processing
- B.Warehousing
- C.Advertising*
- D.Transportation

Ans:C

68.Which of the following is more suitable in the case of automobiles?

- A.Exclusive distribution*
- B.Selective distribution
- C.Intensive distribution
- D.None of these

Ans:A

69.Introduction of product in large scale in the target market is called

- A.Test marketing
- B.Business Analysis
- C.Product testing
- D.Commercialization*

Ans:D

70.Which of the following is not a form of direct marketing?

- A.Kiosk marketing
- B.Telemarketing
- C.Super market*

D.Catalogue marketing

Ans:C

71.In a competitive market having several substitutes,a firm may adopt.

A.Premium pricing

B.Skimming

C.Penetration*

D.None of these

Ans:C

72.The objective of relationship marketing is

A.Customer satisfaction

B.Customer dissatisfaction

C.Customer retention

D.Customer delight*

Ans:D

73.Rapid penetration strategy involves

A.Low price with high promotional expenditure*

B.High price with high promotional expenditure

C.High price with low promotional expenditure

D.Low price with low promotional expenditure

Ans:A

74.Which of the following is not an element of promotion mix?

A.Transportation*

B.Advertising

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C.Personal selling

D.Sales Promotion

Ans:A

75.-----involves creating a brand identity based on heritage or nostalgia for a company's past products.

A.Niche Marketing

B.Retro Marketing*

C.Online Marketing

D.Direct Marketing

Ans:B

76.Which of the following aspect is concerned with working conditions and amenities such as canteens,cheches,housing,transport,etc?

A.Industrial Relations Aspect

B.Labour Aspect

C.Welfare Aspect*

D.Monetary Aspect

Ans:C

77.In the job designing concept,BPR stands for

A.Business Process Resourcing

B.Business Process Reengineering*

C.Business Process Reporting

D.Business Process Remodeling

Ans:B

78.The vertical expansion of job by increasing the amount of worker's responsibilities associates with the position is called:

- A.Job Rotation
- B.Job Simplification
- C.Job Enrichment*
- D.Job Enlargement

Ans:C

79.Which of the following is not an external source of recruitment?

- A.Employment Exchanges
- B.Data Banks
- C.Labor Contractors
- D.Transfer*

Ans:D

80.-----test is designed to find out how efficiently and swiftly as applicant uses his hands,fingers,eyes or other parts of body

- A.Aptitude Test
- B.Achievement Test
- C.Interest Test
- D.Dexterity Test*

Ans:D

81.Which Socio-political activist in Kerala was known as "Mithavadi"?

- A.C.Sankaran
- B.K.P.Kesava Menon
- C.C.Kesavan

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D.C.Krishnan*

Ans:D

82.In India,Judiciary is:

A.Independent*

B.Unde the President

C.Under the Parliament

D.Under the Prime Minister

Ans:A

83.The Directive Principles of State Policy”is just like a cheque on bank payable at the convenience of the bank Who made this remark?

A.Dr.B.R.Ambedkar

B.Prof.K.T.Shah*

C.Jawaharlal Nehru

D.Dr.Rajendraprasad

Ans:B

84.The comptroller and Auditor General acts as

A.The guardian of Indian Economy

B.The Guardian of Public Finance*

C.The Guardian of Peoples Liberty

D.None of the above

Ans:B

85.The National Food Security Act(NFSA)enacted into law on

A.12th September 2013*

B.1st April 2010

C.12th October 2005

D.2nd February 2006

Ans:A

86.In 1834,an English School was opened at Thiruvananthapuram by an Englishman Roberts under the patronage of

A.Rani Gauri Lakshmi Bhai

B.Rani Gauri Parvathi Bhai

C.Swathi Thirunal*

D.Karthika Thirunal

Ans:C

87."Madras Yathra',a poetry travelogue is written by

A.A.R.Rajraja Varma

B.Unnai Wariyar

C.Kodungalloor Kunjikkuttan Thampuran*

D.Kerala Varma Valiyakoyi Thampuran

Ans:C

88.Which one of the following public sector banks emblem figures a dog and the words(Faithful' Friendly')in it?

A.Canara Bank

B.Punjab National Bank

C.State Bank of India

D.Syndicate Bank*

Ans:D

89."Kallumaala Samaram"the famous emancipation agitation in Kerala was led by

- A.Ayyan Kali*
- B.Thaikad Ayya
- C.Chattambi Swami
- D.Dr.Palpu

Ans:A

90.Temple Entry Proclamation was on 1936

- A.29th March
- B.12th November*
- C.1st July
- D.31st July

Ans:B

91.'Darsanamaala',the famous work of Sree Narayana Guru was written in which language?

- A.Malayalam
- B.Tamil
- C.Sanskrit*
- D.Hindi

Ans:C

92.'Pookottur Revolt'is related to which of the following incidents?

- A.Pazhassi Revolt
- B.Veluthambi Revolt

- C.Attingal Revolt
- D.Malabar Revolt*

Ans:D

93.Who inaugurated the New Suez Canal in August 2015?

- A.Mohab Mamish
- B.Abdel Fattah el-Sis*
- C.Ban Ki Moon
- D.Ahmed Hamidi

Ans:B

94."Veera Virada Kumara Vibho"the beautiful literary lines created by

- A.Unnai Wariyer
- B.Swathi Thirunal
- C.Irayimman Thambi*
- D.Ramapurathu Wariyar

Ans:C

95.Who was the first President of Kerala Khilafat Committee?

- A.Abdul Rahman Sahib
- B.Kunjikkoya Thangal*
- C.Ali Musaliyar
- D.Manjeri Athan Moyin Gurukkal

Ans:B

96.Which Malayalam Literary journal established in 1904 to serve as a voice of the under privileged communities was popularly referred as the "Ezhava Gazatte"?

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A.Mithavadi

B.Samadarsi

C.Yukthivadi

D.Vivekodayam*

Ans:D

97.Who was popularly known as the Jhansi Rani of Travancore?

A.Anna Chandi

B.Kuttimalu Amma

C.Accamma Cherian*

D.Ammu Swaminathan

Ans:C

98.The first non Nambuthiri Brahmin to ring the temple bell of the Guruvayoor temple was

A.P.Krishna Pillai*

B.T.K.Madhavan

C.A.K.Gopalan

D.K.Kelappan

Ans:A

99.In the Cause of the People is the autobiography of which Kerala Leader?

A.A.K.Gopalan*

B.Mannath Padmanabhan

C.E.M.S.Namboothiripad

D.Pattam Thanupillai

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Ans:A

100.'Independence of India League',a left wing within the Indian National Congress.formed in 1927 under the leadership of:

A.Bhagat Singh and Chandrasekhar Azad

B.Motilal Nehru and C.R.Das

C.M.N.Roy and Joshi

D.Jawaharlal Nehru and Subhash Chandra Bose*

Ans:D