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|  | **2020** |
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***PART “A” (OBJECTIVES).***

***Choose the best answer:***

 ***i)ANSWER:***

  **a. Normal**

***II)ANSWER:***

  **b. population parameter**

 ***III)ANSWER:***

  **a. Rejecting a true null hypothesis**

 ***IV)ANSWER:***

b) 

***V) ANSWER:-***

1. z = -1.76

 ***VI)ANSWER:***

 d. Two population variance.

 ***VII)ANSWER:***

 **a. Accept the null hypothesis**

***VIII)ANSWER:***

**5%**

 ***IX) ANSWER:***

**Null**

***X)ANSWER:***

**T- test (t – statics)**

***Part “B” (Question)***

***Q (1): “a”***

***Answer (1): “a”***

***ANSWER:***

1. H0: μ = 100

HA: μ ≠ 100

***ANSWER:***

1. H0: π = 0.65

HA: π ≠ 0.65

***ANSWER:***

1. H0: μ = 4.5

HA: μ ≠ 4.5

***Q (1): “b”***

***Answer (1): “b”***

**Z = - 1.57**

1. So – 3 .06 lies in rejection region
2. So 3.06 lies in acceptance region
3. So 0.8 lies in acceptance region

***Q (2): “a”***

***Answer (2): “a”***

1. For 80% Confidence Level = 1.021 ≤ σ2 ≤ 2.5089
2. For 98% Confidence Level = 0.7573 ≤ σ2 ≤ 3.9486

***Q (2): “b”***

***Answer (2): “b”***

* ***Write t value and chi square value***
	+ - n = 12 , α = 1 % t – value = 3.1058
		- Chi Square 𝛑2 = 26.757
* ***Write f value***

n1= 25 , n2 = 5 α = 0.01

* For V1 = n1 – 1

 25 – 1 = 24

* For V2 = n2 – 1

 5 – 1 = 4

 ***f table value is***

* when V1 = 24 & V2 = 4

f – table value = 20.03

* when V1 = 4 & V2 = 14

f – table value = 4.89

* ***Write z table value:***

Z = -2.22 Value in table = 0.0132

***Q (3): B (a*):**

***Answer (3): “B” (a):***

 ***Given data:***

$μ=8 $ $σ=0.15$ n = 50 x = 7.955 ∝ = 1% = 0.01

P = X / n $=\frac{7.955}{50}=0.1591$

1. H0 : μ = 8

H1 : μ ≠ 8

1. ***STEP 1:*** ∝ = 0.01
2. ***STEP 2:*** Z – Test

Z= $\frac{x- μ}{σ /√n} $

Acceptance Region

Rejection Region

1. ***STEP 4***:

Z < - 2.14 = 0.9838

Z > 2.14

 1 – 0.9838 = 0.0162

2.14

- 2.14

1. ***STEP 5***: **Z=** $\frac{x- μ}{σ /√n}$

Z = $\frac{7.955-8}{0.15/\sqrt{50}}=\frac{-0.045}{0.15/7.07} =\frac{-0.045}{0.021} =- 2.14$

***Now P – value;***

P (Z > 2.14) = 0.9838

 1 – 0.9838 = 0.0162

P (Z < - 2.14) = 0.0162

P = 0.0162 + 0.0162

= ***0.0324 ANSWER***

***CONCLUSION:-***

* + P is less than α and we reject H0 and accept HA.

***Q (3): B (b):***

***Answer (3): “B” (b):***

 $0.4080<\frac{\sqrt{σ}}{\sqrt{σ}}<3.839$ **ANSWER**

***Q (4): “A”***

***Answer (4): “A”***

$GIVEN DATA :μ=1000 $ $S=9$ ∝ = 1% = 0.01 X=980

1. H0 : μ = 1000

H1 : μ < 1000

1. ∝ = 0.01

1 – 0.01 = 0.99 Finding “t” From Table t = 2.33, t < - 2.33

1. t – Test

t > - 2.33

t = $\frac{Ẍ - μ}{S /√n} $

Acceptance Region

Rejection Region

- 2.33

1. **t =** $\frac{Ẍ - μ}{S /√n} $

t = $\frac{980-1000}{9/\sqrt{8}}=\frac{-20}{9/2.8284} =\frac{-20}{3.1819} =-6.285ANSWER$

***CONCLUSION:-***

Value – 6.28 is less – 2.33 so we reject H0 and accept H1

for example, population mean contest is less than 1000kpa, - 6.29 lies in rejection region.

***Q (4): “B”***

***Answer (4): “B”***

 P – value = 0.002

 α = 0.01

 P – value >α

 0.002 >0.01

***CONCLUSION:-***

So we reject H1 and H0 because P> α.