DAE / IIA - 2018

MATH - 233 APPLIED MATHEMATICS - II

PAPER 'A' PART - A (OBJECTIVE)

Time: 30 Minutes Marks: 15

Q.1: *Encircle the correct answer.*

1. A function $f(x) = x^2 + 2x + 3$ is:

[a] Odd [b] Even
[c] Implicit [d] Explicit

2. If $f(x) = 2(x-1)+3,$, then $f(2) = ?$

[a] 0 [b] 1 [c] 3 [d] 5

3. $\frac{d}{dx}(2x+3)^4 = ?$

[a] $8(2x+3)^3$ [b] $4(2x+3)^3$
[c] $(2x+3)^3$ [d] $4(2x+3)^2$

4. $\frac{d}{dx}\left(\frac{u}{c}\right) = ?$

[a] $\frac{du}{dx}$ [b] $\frac{1}{c}\frac{du}{dx}$
[c] $c\frac{d}{dx}\left(\frac{u}{c}\right)$ [d] 0

5. $\frac{d}{dx}\left(\frac{1}{x}\right) = ?$

[a] $\frac{1}{x^2}$ [b] $-\frac{1}{x^2}$ [c] $-\frac{1}{x^3}$ [d] $\frac{2}{x}$

6. $\frac{d}{dx}(\sin x^3) = ?$

[a] $\cos x^3$ [b] $-\cos x^3$
[c] $3x\cos x^3$ [d] $3x^2\cos x^3$

7. $\frac{d}{dx}\left[\cos\left(\frac{1}{x}\right)\right] = ?$

[a] $-\sin\left(\frac{1}{x}\right)$ [b] $\sin\left(\frac{1}{x}\right)$
[c] $\frac{1}{x^2}\sin\left(\frac{1}{x}\right)$ [d] $-\frac{1}{x^2}\sin\left(\frac{1}{x}\right)$

8. $\frac{d}{dx}(\sin ax + \cos ax) = ?$

[a] $a\cos x + a\sin x$
[b] $a\cos x - a\sin x$
[c] $\cos ax + \sin ax$
[d] $a\cos ax - \sin ax$

5. $\frac{d}{dx}(\operatorname{cosec}3x) =$

[a] $-\operatorname{cosec}3x\cot 3x$
[b] $-3\operatorname{cosec}3x\cot 3x$
[c] $\cot 3x$ [d] $\operatorname{cosec}3x$

10. For an increasing function $\frac{dy}{dx}$ is:

[a] +ve [b] −ve [c] zero [d] None

11. For a decreasing function $\frac{dy}{dx}$ is:

[a] +ve [b] −ve [c] zero [d] None

12. A set of data is called:

[a] Continuous data
[b] Discontinuous
[c] Population [d] Sample

13. The difference between the lower and upper class boundaries is called:

[a] Common difference
[b] size or length of interval
[c] Difference operator
[d] Size of the table

14. A process of obtaining an observation is called:

[a] An experiment [b] Trail
[c] Out come [d] An event

15. The result obtained from an experiment or a trial is called:

[a] Sample space [b] An event
[c] Out come [d] Population

Answer Key

1	d	2	d	3	a	4	d	5	b
6	d	7	c	8	d	9	b	10	a
11	b	12	d	13	b	14	a	15	c

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DAE / IIA - 2018

MATH - 233 APPLIED MATHEMATICS - II

PAPER 'B' PART - B (SUBJECTIVE)

Time : 2 : 30Hrs Marks : 60

Section - I

Q.1. Write short answers to any Eighteen (18) questions.

1. If $f(x) = 3x^2 - 7x + 4$, then find $f\left(\frac{1}{x}\right)$.

Sol. As, $f(x) = 3x^2 - 7x + 4$

Replace 'x' by '$1/x$', we have:

$$f\left(\frac{1}{x}\right) = 3\left(\frac{1}{x}\right)^2 - 7\left(\frac{1}{x}\right) + 4$$

$$= \frac{3}{x^2} - \frac{7}{x} + 4 = \boxed{\frac{3 - 7x + 4x^2}{x^2}}$$

2. If $f(x) = 2x\sqrt{1 - x^2}$, then find $f(\sin\theta)$

Sol. As, $f(x) = 2x\sqrt{1 - x^2}$

Put $x = \sin\theta$, we have:

$$f(\sin\theta) = 2\sin\theta\sqrt{1 - \sin^2\theta}$$

$$= 2\sin\theta\sqrt{\cos^2\theta} = 2\sin\theta\cos\theta = \boxed{\sin 2\theta}$$

3. If $f(x) = \frac{2x}{1 + x^2}$, then find $f(\tan A)$.

Sol. As, $f(x) = \frac{2x}{1 + x^2}$

Put $x = \tan A$, we have:

$$f(\tan A) = \frac{2\tan A}{1 + \tan^2 A}$$

$$= \frac{2\tan A}{\sec^2 A} = 2\frac{\sin A}{\cos A}.\cos^2 A$$

$$= 2\sin A\cos A = \boxed{\sin 2A}$$

4. If $f(x) = \frac{1}{1 - x}$, then find $f[f(5)]$

Sol. As, $f(x) = \frac{1}{1 - x} \rightarrow (i)$

Put $x = 5$ in eq. (i)

$$f(5) = \frac{1}{1 - 5} = \frac{1}{-4} = -\frac{1}{4}$$

Put $x = f(5)$ in eq. (i)

$$f[f(5)] = \frac{1}{1 - \left(-1/4\right)}$$

$$= \frac{1}{\frac{4 + 1}{4}} = \frac{1}{5/4} = \boxed{4/5}$$

5. ~~Differentiate with respect to x by ab-initio~~ x^2.

Sol. Let, $y = x^2 \rightarrow (i)$

Step-I: then $y + \delta y = (x + \delta x)^2 \rightarrow (ii)$

Step-II: Subtracting eq. (i) from eq. (ii), we have:

$$y + \delta y - y = (x + \delta x)^2 - x^2$$

$$\delta y = x^2 + 2x\delta x + \delta x^2 - x^2$$

$$\delta y = 2x\delta x + \delta x^2$$

$$\delta y = \delta x(2x + \delta x)$$

Step-III: Dividing both sides by 'δx':

$$\frac{\delta y}{\delta x} = 2x + \delta x$$

Step-IV: Taking limit $\delta x \to 0$ on both sides:

$$\lim_{\delta x \to 0} \frac{\delta y}{\delta x} = \lim_{\delta x \to 0} (2x + \delta x)$$

$$\frac{dy}{dx} = 2x + 0 = \boxed{2x}$$

6. ~~Differentiate with respect to x by ab-initio~~ x^3.

Sol. Let, $y = x^3 \rightarrow (i)$

Step-I: then $y + \delta y = (x + \delta x)^3 \rightarrow (ii)$

Step-II: Subtracting eq.(i) from eq.(ii), we have:

$$y+\delta y-y=(x+\delta x)^3-x^3$$

$$\delta y=x^3+3x^2\delta x+3x\delta x^2+\delta x^3-x^3$$

$$\delta y=3x^2\delta x+3x\delta x^2+\delta x^3$$

$$\delta y=\delta x\left(3x^2+3x\delta x+\delta x^2\right)$$

Step-III: Dividing both sides by 'δx':

$$\frac{\delta y}{\delta x}=3x^2+3x\delta x+\delta x^2$$

Step-IV: Taking limit $\delta x\to 0$ on both sides:

$$\lim_{\delta x\to 0}\frac{\delta y}{\delta x}=\lim_{\delta x\to 0}\left(3x^2+3x\delta x+\delta x^2\right)$$

$$\frac{dy}{dx}=3x^2+3x(0)+(0)^2$$

$$\frac{dy}{dx}=3x^2+0+0=\boxed{3x^2}$$

7. ~~**Differentiate $\frac{1}{x^2}$ w.r.t. 'x' by 1[st] principle.**~~

Sol. Let, $y=\frac{1}{x^2}\to(i)$

Step-I: then $y+\delta y=\frac{1}{(x+\delta x)^2}\to(ii)$

Step-II: Subtracting eq.(i) from eq.(ii), we have:

$$y+\delta y-y=\frac{1}{(x+\delta x)^2}-\frac{1}{x^2}$$

$$\delta y=\frac{x^2-(x+\delta x)^2}{(x+\delta x)^2x^2}\ \{\text{taking L.C.M.}\}$$

$$\delta y=\frac{x^2-\left(x^2+2x\delta x+\delta x^2\right)}{x^2(x+\delta x)^2}$$

$$\delta y=\frac{\cancel{x^2}-\cancel{x^2}-2x\delta x-\delta x^2}{x^2(x+\delta x)^2}$$

$$\delta y=\frac{\delta x(-2x-\delta x)}{x^2(x+\delta x)^2}$$

Step-III: Dividing both sides by 'δx':

$$\frac{\delta y}{\delta x}=\frac{-2x-\delta x}{x^2(x+\delta x)^2}$$

Step-IV: Taking limit $\delta x\to 0$ on both sides:

$$\lim_{\delta x\to 0}\frac{\delta y}{\delta x}=\lim_{\delta x\to 0}\left(\frac{-2x-\delta x}{x^2(x+\delta x)^2}\right)$$

$$\frac{dy}{dx}=\frac{-2x-0}{x^2(x+0)^2}=\frac{-2x}{x^4}=\boxed{-\frac{2}{x^3}}$$

8. **If $y=\sqrt{x}-\frac{1}{\sqrt{x}}$, then show that: $2x\frac{dy}{dx}+y=2\sqrt{x}$**

Sol. $y=\sqrt{x}-\frac{1}{\sqrt{x}}$

Differentiate both sides w.r.t. 'x':

$$\frac{d}{dx}(y)=\frac{d}{dx}\left(\sqrt{x}-\frac{1}{\sqrt{x}}\right)$$

$$\frac{dy}{dx}=\frac{d}{dx}\left(x^{1/2}-x^{-1/2}\right)$$

$$\frac{dy}{dx}=\frac{1}{2}x^{-1/2}-\left(-\frac{1}{2}\right)x^{-3/2}$$

$$\frac{dy}{dx}=\frac{1}{2}\left(x^{-1/2}+x^{-3/2}\right)$$

Now take: $\text{L.H.S.}=2x\frac{dy}{dx}+y$

$$=2x\left[\frac{1}{2}\left(x^{-1/2}+x^{-3/2}\right)\right]+\sqrt{x}-\frac{1}{\sqrt{x}}$$

$$=x^{1/2}+x^{-1/2}+x^{1/2}-x^{-1/2}$$

$$=2x^{1/2}=\text{R.H.S.}$$ **Proved.**

9. **If $y=x^2+\frac{1}{x^2}$, then find $\frac{dy}{dx}$.**

Sol. $y=x^2+\frac{1}{x^2}$

Differentiate both sides w.r.t. 'x':

$$\frac{d}{dx}(y)=\frac{d}{dx}\left(x^2+\frac{1}{x^2}\right)$$
$$\frac{dy}{dx}=\frac{d}{dx}\left(x^2+x^{-2}\right)$$
$$\frac{dy}{dx}=2x+(-2)x^{-3}$$
$$\frac{dy}{dx}=2x-\frac{2}{x^3}\Rightarrow \boxed{\frac{dy}{dx}=\frac{2x^4-2}{x^3}}$$

10. **Differentiate $\left(x+x^{-1}\right)^2$ w.r.t. 'x'.**

Sol. $\frac{d}{dx}\left(x+x^{-1}\right)^2$

$$=2\left(x+x^{-1}\right)^{2-1}\left(\frac{d}{dx}\left(x+x^{-1}\right)\right)$$
$$=2\left(x+x^{-1}\right)\left(1+(-1)x^{-2}\right)$$
$$=2\left(x+\frac{1}{x}\right)\left(1-\frac{1}{x^2}\right)$$
$$=2\left(\frac{x^2+1}{x}\right)\left(\frac{x^2-1}{x^2}\right)$$
$$=2\left(\frac{\left(x^2\right)^2-(1)^2}{x^3}\right)=\boxed{2\left(\frac{x^4-1}{x^3}\right)}$$

11. **Find the value of $\frac{d}{dx}\left(\frac{1-\cos x}{\sin x}\right)$**

Sol. $\frac{d}{dx}\left(\frac{1-\cos x}{\sin x}\right)$ {using Product Rule}

$$=\frac{\sin x\left(\frac{d}{dx}(1-\cos x)\right)-(1-\cos x)\left(\frac{d}{dx}(\sin x)\right)}{\sin^2 x}$$
$$=\frac{\sin x\left(0-(-\sin x)\right)-(1-\cos x)(\cos x)}{\sin^2 x}$$
$$=\frac{\sin^2 x-\cos x+\cos^2 x}{\sin^2 x}$$
$$=\frac{1-\cos x}{\sin^2 x} \qquad \because \left\{\sin^2 x+\cos^2 x=1\right\}$$
$$=\frac{2\sin^2\frac{x}{2}}{\left(2\sin\frac{x}{2}\cos\frac{x}{2}\right)^2} \because \left\{\sin x =2\sin\frac{x}{2}\cos\frac{x}{2}\right\}$$
$$=\frac{2\sin^2\frac{x}{2}}{4\sin^2\frac{x}{2}\cos^2\frac{x}{2}}=\frac{1}{2\cos^2\frac{x}{2}}=\boxed{\frac{1}{2}\sec^2\frac{x}{2}}$$

12. ~~**Differentiate $\cos^2 x$ w.r.t. $\sin^2 x$.**~~

Sol. Let, $y=\cos^2 x$ & $t=\sin^2 x$

Differentiate both equations both sides w.r.t. 'x':

$\frac{d}{dx}(y)=\frac{d}{dx}(\cos^2 x)$	$\frac{d}{dx}(t)=\frac{d}{dx}(\sin^2 x)$
$\frac{dy}{dx}=2\cos x\left(\frac{d}{dx}(\cos x)\right)$	$\frac{dt}{dx}=2\sin x\left(\frac{d}{dx}(\sin x)\right)$
$\frac{dy}{dx}=2\cos x(-\sin x)$	$\frac{dt}{dx}=2\sin x\cos x$
$\frac{dy}{dx}=-2\sin x\cos x$	$\frac{dx}{dt}=\frac{1}{2\sin x\cos x}$

By using Chain's Rule: $\frac{dy}{dt}=\frac{dy}{dx}\times\frac{dx}{dt}$

$$\frac{dy}{dt}=(-2\sin x\cos x)\left(\frac{1}{2\sin x\cos x}\right)=\boxed{-1}$$

13. **Find the derivative of $x\cot x$ w.r.t. 'x'.**

Sol. $\frac{d}{dx}(x\cot x)$

$$=\left(\frac{d}{dx}(x)\right)\cot x+x\left(\frac{d}{dx}(\cot x)\right)$$
$$=1.\cot x+x\left(-\mathrm{cosec}^2 x\right)$$
$$=\boxed{\cot x-x\,\mathrm{cosec}^2 x}$$

14. ~~**Find $\frac{dy}{dx}$ if $x=a\sec\theta,\ y=b\tan\theta$**~~

Sol. $x=a\sec\theta,\ y=b\tan\theta$

Differentiate both equations both sides w.r.t. 'θ':

$$\frac{d}{d\theta}(x)=\frac{d}{d\theta}(a\sec\theta)$$
$$\frac{dx}{d\theta}=a\sec\theta\tan\theta$$
$$\frac{d\theta}{dx}=\frac{1}{a\sec\theta\tan\theta}$$

$$\frac{d}{d\theta}(y)=\frac{d}{d\theta}(b\tan\theta)$$
$$\frac{dy}{d\theta}=b\sec^2\theta$$

By using Chain's Rule: $\frac{dy}{dx}=\frac{dy}{d\theta}\times\frac{d\theta}{dx}$

$$\frac{dy}{dx}=b\sec^2\theta\left(\frac{1}{a\sec\theta\tan\theta}\right)=\frac{b}{a}\frac{\sec\theta}{\tan\theta}$$
$$\frac{dy}{dx}=\frac{b}{a}\cot\theta.\sec\theta$$
$$\frac{dy}{dx}=\frac{b}{a}\frac{\cos\theta}{\sin\theta}\times\frac{1}{\cos\theta}=\boxed{\frac{b}{a}\cos ec\theta}$$

15. ~~**Find the derivative of** $\sin^{-1}\left(\frac{x}{a}\right)$~~

Sol. $\frac{d}{dx}\left(\sin^{-1}\left(\frac{x}{a}\right)\right)$

$$=\frac{1}{\sqrt{1-\left(\frac{x}{a}\right)^2}}\cdot\frac{d}{dx}\left(\frac{x}{a}\right)$$
$$=\frac{1}{\sqrt{1-\frac{x^2}{a^2}}}\times\left(\frac{1}{a}\right)=\frac{1}{\sqrt{\frac{a^2-x^2}{a^2}}}\cdot\frac{1}{a}$$
$$=\frac{1}{\frac{\sqrt{a^2-x^2}}{a}}\cdot\frac{1}{a}=\boxed{\frac{1}{\sqrt{a^2-x^2}}}$$

16. ~~**Find the value of** $\frac{d}{dx}\left(\sin^{-1}x+\cos^{-1}x\right)$~~

Sol. $\frac{d}{dx}\left(\sin^{-1}x+\cos^{-1}x\right)$

$$=\frac{1}{\sqrt{1-x^2}}-\frac{1}{\sqrt{1-x^2}}=\boxed{0}$$

17. ~~**Find the value of** $\frac{d}{dx}\left(\sec^{-1}\left(\sqrt{x}\right)\right)$~~

Sol. $\frac{d}{dx}\left(\sec^{-1}\left(\sqrt{x}\right)\right)$

$$=\frac{1}{\sqrt{x}\sqrt{\left(\sqrt{x}\right)^2-1}}\cdot\frac{d}{dx}\left(\sqrt{x}\right)$$
$$=\frac{1}{\sqrt{x}\sqrt{x-1}}\cdot\frac{1}{2}(x)^{-1/2}$$
$$=\frac{1}{\sqrt{x}\sqrt{x-1}}\frac{1}{2\sqrt{x}}$$
$$=\frac{1}{2\left(\sqrt{x}\right)^2\sqrt{x-1}}=\boxed{\frac{1}{2x\sqrt{x-1}}}$$

18. **If** $y=x^4-3x^2+4x-1$, **find** $\frac{d^2y}{dx^2}$

Sol. $y=x^4-3x^2+4x-1$

Differentiate both sides w.r.t. 'x':

$$\frac{d}{dx}(y)=\frac{d}{dx}\left(x^4-3x^2+4x-1\right)$$
$$\frac{dy}{dx}=4x^3-3(2x)+4(1)-0$$
$$\frac{dy}{dx}=4x^3-6x+4$$

Differentiate both sides w.r.t. 'x':

$$\frac{d}{dx}\left(\frac{dy}{dx}\right)=\frac{d}{dx}\left(4x^3-6x+4\right)$$
$$\frac{d^2y}{dx^2}=4\left(3x^2\right)-6(1)+0$$
$$\boxed{\frac{d^2y}{dx^2}=12x^2-6}$$

19. **If** $y=\ell n\,x$, **find** y_2

Sol. $y=\ell n\,x$

Differentiate both sides w.r.t. 'x':

$$\frac{d}{dx}(y)=\frac{d}{dx}(\ell n\,x)$$
$$y_1=\frac{1}{x}$$

Differentiate both sides w.r.t. 'x':

$$\frac{d}{dx}(y_1)=\frac{d}{dx}\left(\frac{1}{x}\right)$$

$$y_2=\frac{d}{dx}\left(x^{-1}\right)=-1(x)^{-2}=\boxed{\frac{-1}{x^2}}$$

20. **If $y=\cos 3x+\sin 3x$, show that: $y_2+9y=0$**

Sol. $y=\cos 3x+\sin 3x$

Differentiate both sides w.r.t. 'x':

$$\frac{d}{dx}(y)=\frac{d}{dx}(\cos 3x+\sin 3x)$$

$$y_1=-\sin 3x(3)+\cos 3x(3)$$

$$y_1=-3\sin 3x+3\cos 3x$$

Differentiate both sides w.r.t. 'x':

$$\frac{d}{dx}(y_1)=\frac{d}{dx}(-3\sin 3x+3\cos 3x)$$

$$y_2=-3\cos 3x(3)+3(-\sin 3x)(3)$$

$$y_2=-9\cos 3x-9\sin 3x$$

$$y_2=-9(\cos 3x+\sin 3x)$$

$y_2=-9y \Rightarrow y_2+9y=0$ **Proved.**

21. **If $y=Ae^{mx}+Be^{-mx}$, show that: $y_2-m^2y=0$**

Sol. $y=Ae^{mx}+Be^{-mx}$

Differentiate both sides w.r.t. 'x':

$$\frac{d}{dx}(y)=\frac{d}{dx}\left(Ae^{mx}+Be^{-mx}\right)$$

$$y_1=Ae^{mx}(m)+Be^{-mx}(-m)$$

$$y_1=Ame^{mx}-Bme^{-mx}$$

Differentiate both sides w.r.t. 'x':

$$\frac{d}{dx}(y_1)=\frac{d}{dx}\left(Ame^{mx}-Bme^{-mx}\right)$$

$$y_2=Ame^{mx}(m)-Bme^{-mx}(-m)$$

$$y_2=Am^2e^{mx}+Bm^2e^{-mx}$$

$$y_2=m^2\left(Ae^{mx}+Be^{-mx}\right)$$

$$y_2=m^2y$$

$y_2-m^2y=0$ **Proved.**

22. **Define statistics.**

Sol. Statistics is the science of estimation and probabilities.

23. **What is primary data?**

Sol. It is most origin data and has not undergone any statistical treatment.

24. **What is primary data?**

Sol. It is the data which has gone through statistical treatment, at least once.

25. **If a die is rolled once, what is the probability of getting an even number?**

Sol. $S=\{1, 2, 3, 4, 5, 6\}$, $n(S)=6$

Let A be event that even number appear.

$A=\{2, 4, 6\}$, $n(A)=3$

$$P(A)=\frac{n(A)}{n(S)}=\frac{3}{6}=\boxed{\frac{1}{2}}$$

26. **A card is drawn at random from a deck of 52 cards. Find the probability of getting a diamond.**

Sol. $n(S)=52$

Let A be event that it is a diamond card. $n(A)=13$

$$\therefore P(A)=\frac{n(A)}{n(S)}=\frac{13}{52}=\boxed{\frac{1}{4}}$$

27. **A fair coin is tossed twice what is the probability that we get at least on head.**

Sol. $S=\{HH, HT, TH, TT\}$, $n(S)=4$

Let A be event that at least one head appears.

$A=\{HH,\ HT,\ TH\}\Rightarrow n(A)=4$

$\therefore P(A)=\frac{n(A)}{n(S)}=\boxed{\frac{3}{4}}$

Section - II

Note : Attemp any three (3) questions $3\times 8 = 24$

Q.2.(a) Prove that: $f[f(x)]=x$, for the function $f(x)=\frac{x+1}{x-1}$

Sol. See Q.10 of Ex # 1.1 (Page # 9)

(b) ~~Evaluate $\lim_{x\to a}\frac{x^n-a^n}{x^m-a^m}$~~

Sol. See Q.3(iii) of Ex # 1.3 (Page # 30)

Q.3.(a) Find $\frac{dy}{dx}$ of $x^5+y^5=5a^2x^2y^2$

Sol. See Q.2(iii) of Ex # 2.3 (Page # 71)

(b) Find the derivative of $\frac{\sqrt{x^2+1}-\sqrt{x^2-1}}{\sqrt{x^2+1}+\sqrt{x^2-1}}$

Sol. See Q.2 of Ex # 2.4 (Page # 90)

Q.4.(a) If $xy=\cos(x+y)$, show that $\frac{dy}{dx}+\frac{y+\sin(x+y)}{x+\sin(x+y)}=0$

Sol. See Q.5[a] of Ex # 3.1 (Page # 120)

(b) ~~If $y=\tan(p\tan^{-1}x)$, show that $(1+x^2)\frac{dy}{dx}=p(1+y^2)$~~

Sol. See Q.3 of Ex # 3.2 (Page # 132)

Q.5.(a) Use differentials to find the approximate value of $\sqrt[3]{124}$

Sol. See Q.6(ii) of Ex # 4.1 (Page # 177)

(b) Find the maximum and minimum (extreme) values of the function $(x-4)^2(x-2)$

Sol. See Q.2(vii) of Ex # 4.2 (Page # 193)

Q.6.(a) Calculate the median from the following table.

Class	Frequency
65 – 84	7
85 – 104	6
105 – 124	8
125 – 144	2
145 – 164	2
165 – 184	2
185 – 204	3

Sol. See example # 7 of Chapter 05.

(b) ~~Calculate S.D. from the following data.~~

Group	Frequency
20 – 24	1
25 – 29	4
30 – 34	8
35 – 39	11
40 – 44	15
45 – 49	9
50 – 54	2

Sol. See Q.7 of Ex # 5.2 (Page # 243)

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