1. (b) We have 

 …..(i)



where 

 or 

Clearly, satisfies (i); .

1. (d) We have, 

.

 ,



Similarly .

1. (c) 



=.

**Trick :** Put 

Then 

which is given by option (c), *i.e.* 

**Note :** Students should remember at the time of assuming the values of *A, B, θ, ..... etc.* that, for the assumed values, the options must have different values.

1. (d) 







1. (b) 





1. (b) 

.

1. (b) We have,  and 

We know 





Hence, .

**Trick :** As  is independent of *m*, therefore put  then  and . Therefore,  Hence 

(Also check for other values of *m*).

1. (b) We know that 







1. (a) 

.

1. (b) Given that 





.

1. (d) 



.

1. (b) 

.

1. (b) We have 

and 

 and 







Now, .

1. (a) 

.

1. (a) We have 

⇒ 

⇒

⇒ .

1. (a) Divided by  in numerator and denominator,

we get, 

.

1. (a) 

∴  …..(i)

From 2nd relation,

 .....(ii)

  and .

1. (b) Given, 

∴



⇒ .

1. (c) 



.

1. (c) 



Here 









Now, we take 



 Hence 

Therefore.

1. (d) 







.

1. (c) 









1. (d) .
2. (b) 





.

1. (b) 

= = 

= = 

=  = 2.

1. (b) We have 

.

1. (c) 

.

**Trick** : Put , since for no option will give the common value.

1. (c) Let so 



 The maximum value of 

{Since the maximum value of }.

**Aliter :** As we know that, the maximum value of is  and the minimum value is . Therefore, the maximum value is  and the minimum value is – 5.

1. (c) 

.

1. (d) Since 

we have  and

Hence, .